Van Vantana

MANUAL GB

Version 11/2016

Hobby

Dear Camper,
Congratulations on the purchase of your new HOBBY van. The trust you have placed in us is both an incentive and an obligation to continuously implement new ideas, technical innovations and fine touches to make our vehicles even better.

Please read this operating manual carefully, even if you've been driving a mobile home or van for a longer period of time. Correct use of all technical details will increase your driving pleasure and assist in conserving the value of your van.

Take advantage of your authorised dealer's experience and technical knowledge - we recommend speaking to him in detail before taking your first trip with your HOBBY van.

We wish you and your fellow travellers many enjoyable trips and hope you will always have a safe journey with your new HOBBY van.

Your
HOBBY – Wohnwagenwerk
Ing. Harald Striewski GmbH

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Chapter 1: Introduction

1.1 General information

Our van are continuously being further developed and for this reason we must reserve the right to make changes to the equipment, shape and technology.

Certain kinds of accessories are also described in this user manual that are not part of the standard scope of delivery.

For this reason, no claims may be asserted against HOBBY based on the contents of this user manual. Those accessories that are available at the time of going to print are described here. They have been applied on a par for all floor plans.

Please note that it was not possible to describe all of the individual variations here. If you have any special questions concerning accessories or the technology of the vehicle, your dealer will be happy to answer them.

Your HOBBY van has been built in accordance with the latest technology and approved safety regulations. Despite all precautionary measures, however, it is possible that passengers may be hurt or the van damaged if the safety instructions in this user manual and the warning stickers placed throughout the van are not observed.

We would explicitly like to point out that we do not accept any liability for damages or malfunctions that arise because these operating instructions have been ignored.

- Please use the van only when it is technically in top
- Any defects that affect the safety of passengers or the van should be remedied immediately by trained personnel.
- The brake system and the gas system should only be checked and repaired by an authorised workshop.
- Please ensure that all of the deadlines for checking equipment and inspections are met.

Before taking your first drive

Please do not consider this manual to be just a means of reference, but familiarize yourself thoroughly with it before taking your first drive.

Fill out the guarantee cards in the different manuals for the installed equipment and fittings and send them to the manufacturers. This will ensure guarantee claims for any of the equipment.

In accordance with guarantee conditions, HOBBY's dealer will give you a 5-year guarantee on the consistency of the van. Your dealer will give you a guarantee booklet, “5 Years‘ Guarantee on Consistency“ when you pick up your vehicle.

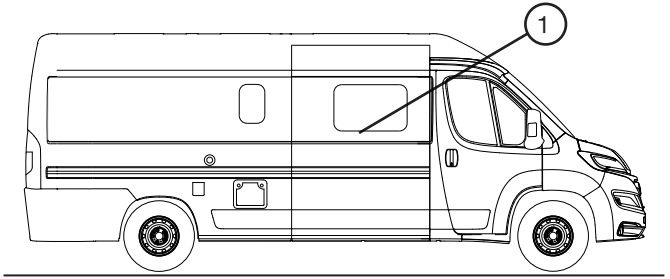
Annual leak checks are not free of charge. If a consistency test has not been carried out, you will forfeit any claims for a 5-year guarantee on consistency.

1.2 Designations in the operating instructions

This manual explains the van in the following manner:

Texts and illustrations
Texts that refer to illustrations are found directly below the illustrations.

Details in illustrations (here: entrance) have been given item numbers .



Indicating details with the help of position numbers

Lists
Lists are given in the form of key words and shown as bullet points using “-“.

Handling instructions
Handling instructions are also given in the form of key words beginning with the symbol "•".

Notes

Notes point out important details that ensure your van and its fittings will function perfectly. Please remember that there may be some differences in description to the various kinds of equipment that can be supplied.

Warnings

Warnings make you aware of dangers that may lead to material being damaged or even people being hurt if they are not observed.

Environmental Tips

Environmental tips give you possibilities for lessening the impact on the environment.

Optional Extras
You have selected a van that is equipped to taste.

This user manual describes all of the models and equipment offered within the same programme. Therefore, it may include equipment that you have not selected.

Differences and, thus, all of the optional extras are marked with an asterisk „*".

Should there be any equipment or model that is not described in this user manual, please note the enclosed additional operating instructions.

Timeliness of This Manual
The high level of quality and security for vans is ensured by means of continuous further development. In very rare cases, there may be a difference between the description and the vehicle itself.

Chapter 2: Safety

2.1 Intended use

This van has been designed as a mobile travel accommodation for private, not commercial use. It is not intended for permanent residence. Furthermore, no more than the number of people for which this camper has been planned may spend the night in the vehicle. When the camper is on the road, it may only be used in accordance with road traffic regulations and national vehicle safety standards.

This van may not be used for the commercial transport of people/animals and/or goods. On public roads, the van may only be used for carrying personal equipment. Transporting unsecured loads and/or packages is forbidden.

Each person travelling in the van must sit on a seat that is equipped with a seatbelt and wear the seatbelt whenever the vehicle is in motion. The number of people travelling in the van may not exceed the number of seats equipped with a seatbelt. Please ensure that the technically permissible maximum weight of the van and the permitted axle load(s) per axle are not exceeded.

No use of the van other than that described here is permitted; any other use is regarded as contrary to the intended use.

2.2 General information

- The van may only be driven on public roads by someone with a valid driving licence category for such vehicles.
- Operating and user instructions for built-in equipment (refrigerator, heating, cooker, etc.) as well as for the basic vehicle must be observed at all times.
- If accessories or optional equipment is to be installed, this may change the measurements, weight and road performance of the engine home. Some accessories that are fitted after purchase of the vehicle must be entered in the registration document.
- Use only tyres and rims that have been approved for your engine home. Information on tyre and rim sizes can be found in the user manual or in **Chapter 14.4.**

Warnings and information labels are attached both inside and outside the vehicle. These are meant for your safety and may not be removed.

Example of a rescue sheet for the vantana

Rescue sheets

The rescue sheet for the van can be found behind the sun visor. Should there be an accident, the rescue team can obtain all of the important information for this specific model from the rescue sheet.

⚠ Treat the rescue sheet with care; do not make it illegible and always store it in the designated place behind the sun visor.

2.3 Fire protection

Precautions against fire

- Never leave children alone in the vehicle.
- Keep inflammable materials away from all heating and cooking devices.
- Any changes to the electric system, accelerator system or built-in devices may only be carried out by an authorised workshop.
- Install a fire extinguisher next to the main entrance.
- Ensure that everyone is familiar with the guidelines on the fire extinguisher.
- Store a fire blanket near the cooker.
- Do not block any escape routes.
- Familiarise yourself with all safety measures set up on the property.

Fighting fire

- Immediately evacuate all passengers.
- Close the main stop valve on the accelerator cylinder and the accelerator stop valves for the consumer loads.
- Turn off the electric supply.
- Sound the alarm and call the fire department.
- Only fight the fire yourself if you can do so without risk.

2.4 Equipment

2.4.1 Emergency equipment

To be prepared in case of an emergency, you should always carry the three emergency devices on board and familiarize yourself with them.

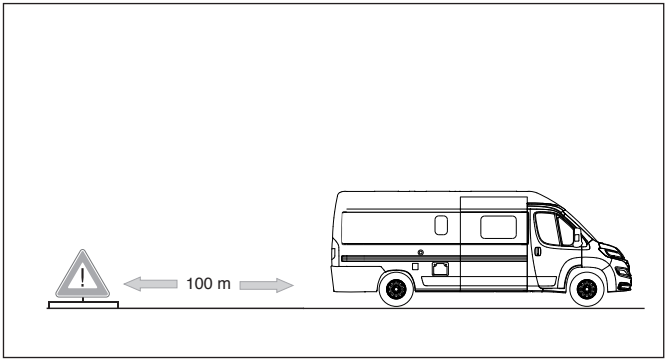
First-aid kit

The first-aid kit should always be at hand and have a fixed position in your van. Any objects removed from the first-aid kit should be replaced immediately. Expiry dates should be checked regularly.

Reflective jacket*

Please refer to the British regulations for carrying and wearing a high-visibility vest with white retro-reflective stripes in accordance with EN 471 whenever you step outside the vehicle on roads outside built-up areas or on the hard shoulder.

- comes to a stop outside city limits on an obscure rural road because of an accident or breakdown, if the view is poor due to bad weather, in twilight or darkness, or
- when it must be secured by means of a warning triangle on the emergency strip of the engineway because of an accident or breakdown.



Minimum distance between warning triangle and van

Warning triangle

The warning triangle should also always be at hand and have a fixed position in your van, preferably together with the first-aid kit.

In an emergency

- Set up the warning triangle at least 100 m in front of the danger zone!

Please observe the national regulations of the countries you are driving through with regard to carrying and wearing emergency equipment. Vans with a technically permissible maximum weight of more than 4 tons must also carry a flashing warning light and at least two (2) chocks (not included in the scope of delivery).

Tool box

2.4.2 Vehicle tool kit

Each vehicle comes with individual basic equipment including a vehicle tool kit and accessories. The toolbox is included separately in the vehicle. Upon delivery, it is located in the rear under the bed.

2.5 Before driving

2.5.1 What to observe before taking your first drive

Vehicle registration (in Germany)

Every vehicle that drives on public roads must be registered. This also applies to your new van. Apply for registration at your local Driver and Vehicle Licensing Agency.

The following documents are required to initiate the registration process:

- Motor Vehicle Registration Certificate Part II and/or Certificate of Conformity (CoC)
- Electronic Insurance Certificate/eIC Number
- personal identification or proof of residence
- possibly, power of attorney to have someone else register the caravan.
- if applicable: direct debit mandate for taxes

General inspection (in Germany)

In common with passenger cars new vans with a permissible total weight up to 3.5 tonnes do not have to undergo a general inspection for the first three years after initial registration. After this they must undergo a general inspection every two years. Vans weighing between 3.5 and 7.5 tonnes must undergo a general inspection

every two years during the first six years following initial registration. After this a general inspection must be carried out every year.

The general inspection can be carried out by the German Technical Surveyance Association (TÜV), the German Engine Vehicle Surveyance Association (DEKRA) or an officially approved expert.

Any changes made to the vehicle that underlie German Road Traffic Licensing Regulations must be officially authorised!

Please inform yourself abroad about any national regulations that may apply with regard to registration and general inspection of your van.

If you have any further questions or difficulties, your authorised Hobby dealer will always be available to assist you!

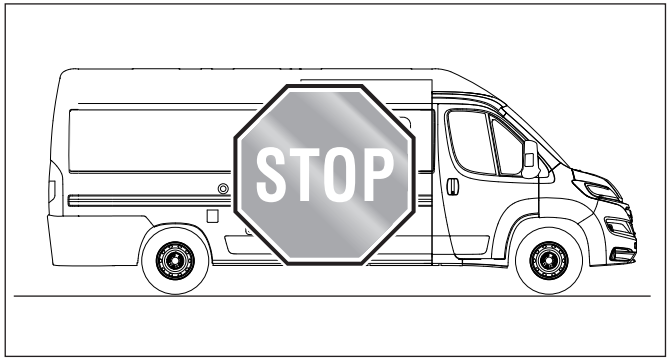
- **Tighten the nuts on the wheels after driving the first 50 miles with your camper.**
- **Switch off the gas-operated built-in devices before putting petrol in the tank.**

2.5.2 Before each drive

Road safety

- Before driving, check that the signalling and lighting systems (switch on battery circuit breaker), steering and brakes function correctly.
- If the vehicle has been standing for a longer period of time (approx. 10 months) have an authorised workshop check the brake system and the accelerator system.
- Set the vehicle's wing mirror.
- Open the blinds on the front and side windows fully and secure them. Should there be a thermal curtain*, remove and store it.
- In winter, the roof must be cleared of snow and ice before driving.
- Regularly check the tyre pressure before driving. False tyre pressure can cause excessive wear, damage to the tyres or even lead to a burst tyre **(see also Chapter 14.5).**
- Check liquids such as oil, coolant, brake fluid and windscreen washer fluid and top them up if necessary.

Only start driving when your van fulfils all of the conditions for roadworthiness.



Prepare the vehicle before driving!

As the owner / driver of the vehicle, you are responsible for the state of the vehicle. Please observe the following points:

Battery

- Fully charge the batteries before each journey. Please refer to the section on "Ancillary battery" **in Chapter 7**.
- Switch on battery circuit breaker.

Driver‘s cabin

Do not forget the following

- Set the sitting position.

Exterior

Check the exterior of the vehicle and carry out the following preparations before driving:

Preparing the vehicle

- Close all of the windows in the living room as well as the roof bonnets and roof windows.
- Retract the entrance step.
- Close and lock the sliding door, rear and service flaps in the superstructure.
- Close the tap for the waste water tank.
- If necessary remove the 230 V electric cable from the exterior socket.
- If necessary, slide the TV antenna* in as far as possible or retract the satellite dish*.
- If necessary, secure any bicycles on the bicycle carrier*, lashing them with the fastening straps to prevent them from slipping, and ensure that existing illumination devices are not covered.
- If necessary turn off the light in the tent.
- If necessary, roll up the awning* and stow the crank securely in the van.

Interior

Some preparations must also be carried out inside the van.

Preparing the interior

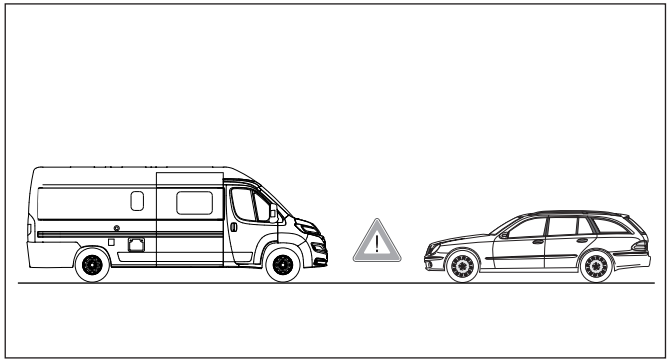
- Sort loose objects and stow them in the compartments.
- Store heavy and / or voluminous objects (e.g. TV, beverage cases) safely before you start your journey, securing them to prevent them from shifting (**see also Chapter 3.3 "Loading"**).
- Ensure that no liquids, including those in the refrigerator, will leak.
- Secure accelerator cylinders.
- Close all of the gas stop valves on the gas devices, with the exception of the stop valve for the heating if the vehicle has been equipped with a gas pressure regulator for use while driving. (e.g. Control CS)
- Turn off interior lights.
- Secure the table and, if possible, lower it.
- Close all doors (including refrigerator compartment doors), drawers and flaps tightly.
- If necessary, secure the TV mount* and, if possible, dismantle the TV and store it securely.
- Fully open the Remis Blinds* for the driver's cab and lock it into place.
- Should there be a thermal curtain*, remove it from the driver's cab.

Do not overload the vehicle! It is imperative that you not the permissible axle loads, the technically permissible overall mass as well as the permissible height, width and length of the van.

Gas bottles may only be transported when they are securely fastened in the gas bottle container provided.

Ensure that there is sufficient ventilation. Never cover up built-in forced ventilation (skylights with forced ventilation or mushroom vents). Ensure that forced ventilation is not covered by snow or leaves as this increases the **danger of suffocation.**

Place a note with all important measures and weights in a visible place in both the van and the driver‘s cabin.



Observe the specific features of the van's driving performance!

2.6 While driving

Your van is not an automobile!
In many situations, it reacts very differently to a “normal“ automobile. Therefore, you should be prepared for the following differences:

Passenger safety

The following applies while driving:

- Only those seats equipped with safety belts may be used by passengers.
- People may not be lying in the beds while driving.
- Passengers must remain in their seats with their seat belt on!
- Only install children's car seats on seats that have been fitted by the manufacturer with three-point belts.
- Turn the swivel seats in the direction of traffic and lock them into place. The seats may not be turned while driving.
- Lock the sliding seat* into its original position.
- Do not open the door latch!
- No extra passengers may remain in the vehicle!

Driving

Take a trial drive before leaving on your first large journey in order to familiarize yourself with the van. Remember to practise reversing. The base vehicle is a commercial vehicle; adjust your driving style accordingly.

The following applies for driving:

- Do not underestimate the length and width of the van. Due to the relatively long rear overhang larger vehicles can veer to one side and, in unfavourable conditions, the rear can hit the ground.
- Be careful when driving into inner courtyards and through entrance gates.
- The van may start to swing from side to side in cross-winds, on wet or icy roads.
- If the van starts to swing, step carefully but firmly on the brake to stabilise the vehicle.

- **Never** accelerate if the van starts to swing.
- Adjust your speed to road and traffic conditions.
- Long descents with a slight gradient can become dangerous. Adjust your speed from the very beginning to allow you to speed up if necessary without endangering other automobiles.
- As a general rule, never drive faster downhill than uphill.
- The van may be caught up in a slipstream when overtaking or being overtaken by lorries with trailers or buses. This effect is counteracted by lightly counter-steering.
- Use foresight while driving; take regular breaks on longer drives.

Driving arround corners

Due to its height, a van begins to sway more quickly than an automobile.

The following applies for driving arround corners

- Never drive too quickly into a corner!
- When turning off the road, always pull out a little more to ensure a larger curve radius. Please note that, depending on the model, the rear end of the van may swing out.

Driving economically

The engine of your van has not been designed to drive constantly under a full load.

The following applies when driving

- Do not keep your foot down on the accelerator!
- The final 20 km/h before reaching top speed require up to 50 % more fuel!

Braking

A van has a different brake response than that of a car. For this reason, inexperienced drivers in particular should carry out several test brake manoeuvres in a suitable location before driving on the road. The braking distance of the van is longer than that of a car. Furthermore, it is strongly influenced by how heavily the van has been loaded.

The following applies for braking

- Not the longer braking distance, especially on wet roads.
- When driving downhill, select a gear that is not higher than when driving uphill.

Should there be any defects or malfunctions in the driving performance of the van, please notify roadside assistance and have any maintenance and repair work carried out by an authorised specialist.

Reversing/Manoeuvring

Your van is far larger than a car.

The following applies to reversing/manoeuvring

- Even if the wing mirrors are correctly adjusted there is a significant blind spot.
- When reversing or parking in places with poor visibility get help to guide you in.

Getting petrol

A number of devices that use an open flame have been built into your van.

The following applies when getting petrol:

- Switch off all gas devices (heating, cooker, etc.)!
- Turn off all mobile phones!
- Never get anything other than diesel fuel.
- Never mistakenly fill the fresh water tank with fuel.

2.7 After driving

Selecting a parking space

The following applies for selecting a parking space

- If possible, pick your spot in daylight.
- Select a parking space that is as level as possible.

Securing the vehicle

The following applies when securing the vehicle

- Put the vehicle in gear.
- Pull on the handbrake.
- If necessary, use blocks (not in scope of delivery).

If the temperature is below 0°C only put the handbrake on lightly and ensure that the vehicle is in gear to prevent the handbrake from freezing up!

When turning the driver‘ seat, ensure that you do not accidently disengage the handbrake.

Switching electric consumption

The following applies when switching electric consumption

- Open the main stop valve on the accelerator cylinder and the accelerator stop valve on the consumer required.

Water installation

Water left standing in the fresh water tank or the pipes quickly becomes undrinkable.

Please empty any residual water from the water tank before filling it with fresh water.

Therefore, check the water pipes and the fresh water tank before each drive to ensure they are clean. Disinfect and rinse the drinking water facility regularly, and always before each journey.

Chapter 3: Chassis

3.1 General Information

The chassis includes parts of the frame and the axles. No technical changes may be made, as otherwise the general type approval will expire!

Technical changes may only be carried out after being released by the manufacturer.

For further information, please refer to the enclosed operating instructions for the basic vehicle.

VIN of the base vehicle

3.2 Vehicle identification number (VIN)

The 17-digit vehicle ID number has been applied to the inner wheel case on the passenger's side.
To identify it more easily, the VIN can also be found on a label on the dashboard, which is legible from outside the vehicle.
In addition, the VIN is also given on the type plate of the base vehicle as well as on the Hobby type plate (in the motor compartment on the upper front cross member of the radiator).

Always have your VIN at hand whenever you have a question or visit your dealer/contractual partner.

Hobby name plate

① Approval number
② Manufacturer's version
③ Vehicle identification number
④ Permissible maximum weight
⑤ Permissible towing weight
⑥ Permissible axle load, 1st axle
⑦ Permissible axle load, 2nd axle

⚠ Do not remove or change the name plate.

3.3 Loading

3.3.1 General information

Rules for loading:

- Spread the load evenly between the left and right-hand side of the van. Heavy or bulky objects belong in the lower storage compartments and near the axle.
- Never overload the rear of the van, because this will have a negative influence on its driving performance.
- The lower the van's centre of gravity, the better its driving performance and response in curves.
- Store baggage in the interior in cupboards and storage compartments.
- Heavy objects should be stowed securely to prevent them from slipping.
- Lighter objects (clothing) should be stowed in the wall cupboards.
- Secure doors and flaps.
- Check the technically permissible maximum weight and the axle load(s) after you have finished loading.
- Slatted frames, Secure mattresses, crossbeams and, if necessary, the bed expansion if these are in a transport position.

Storage space in the rear

When loading the rear of the van, please observe the permissible axle loads and the technically permissible maximum weight. Distribute pay-load evenly. Excess point loads will damage the floor covering.

All of the equipment carried in the rear of the van must be securely fastened using lashing eyes and suitable retaining straps.

- On no account should the permissible rear axle load be exceeded.
- When the storage space in the rear is fully loaded, the driving performance of the van becomes considerably worse due to the load drop on the front axle.
- Always check that the lashing rings are firmly locked before you start your drive.
- The owner/driver of the vehicle is always responsible for ensuring that loads transported in the storage space in the rear have been correctly secured. As far as possible, always use tension belt systems licensed for this purpose.
- Never use rubber expanders. Remember that exceptionally strong driving dynamics can occur in dangerous situations or when you are forced to slam on the brakes.

The maximum axle loads as well as the technically permissible overall mass entered in the vehicle‘s documents may not be exceeded

Overloading can cause the tyres to break down or even burst! This increases the danger that you may lose control of the vehicle. Therefore, you endanger yourself and other road users.

If you are not sure whether or not you have overloaded the vehicle, you should have it weighed at a public weighing facility.

3.3.2 Definition of masses for vans

EU Directive 1230/2012 applies at a European level for calculating the masses and resultant additional loads for vans. The terms and basis used for calculations are explained below.

1. Technically permissible overall mass

Information regarding the technically permissible maximum weight is based on Hobby Wohnwagenwerk's specification in cooperation with the manufacturers of the previous construction stages (Fiat). This mass takes into account the specific operating conditions that are based on the model of the van and its performance, including such factors as material strength, load-carrying capacity of the axles and tyres, etc. For safety reasons, this mass must never be exceeded!

2. Mass when the vehicle is ready to start

The mass when ready to drive is equal to the weight of the empty vehicle including lubricants, tools, spare tyre (or tyre repair kit), petrol (90 %), ancillary battery, all of the standard equipment installed by the factory as well as 75 kg for the driver. In addition, the masses for the fresh water and gas storage containers, which have been filled to 100 % of their total capacity, must be added. The masses are calculated in detail as follows:

	FIAT Vantana
a) Supply of liquefied petroleum gas	
Number of built-in gas regulators:	1
Weight of an 11 kg aluminium bottle:	5
Weight of 11 kg gas inflation:	11
Total:	**16**
b) Liquids	
95 l fresh water tank:	95
10 l hot water heater (heating):	10
Total basic equipment:	**121 kg**

3. Additional equipment / optional extras
Mass of the equipment that was assembled by the manufacturer in or on the van in addition to the standard equipment. These optional extras will be shown in the actual mass of the vehicle if

- they are not part of the standard scope of equipment,
- Hobby or the manufacturer of the base vehicle were responsible for assembling them,
- the customer can order them.

4. Actual mass
Sum of the mass when ready to drive and the optional extras or additional equipment assembled by the manufacturer.

5. Loading capacity / additional load
Difference between the technically permissible maximum weight and the mass when ready to drive, plus the mass of the passengers and the mass of the additional equipment.

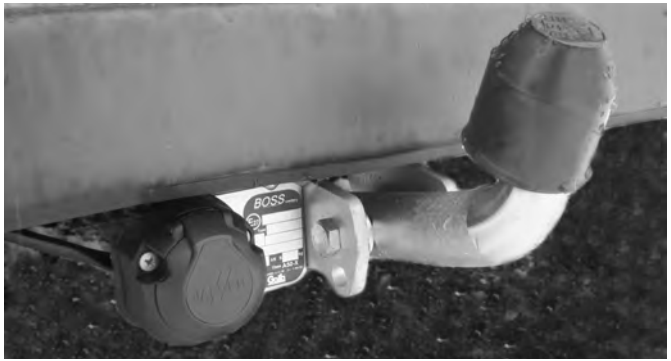
6. Minimum loading capacity
The loading capacity must be equal at least to the formula **10 x (n + L)**, whereby:

n - highest number of passengers plus the driver
L - total length of the superstructure in meters

The minimum loading capacity includes objects that users may carry in the van which are not included in the mass when ready to drive or in the optional extras (e.g. clothing, toilet and kitchen fittings, food, camping equipment, toys, pets).

The remaining additional load (**5.**) must always be greater than or equal to the minimum loading capacity (**6.**); this must be taken into account when determining the configuration of the vehicle.

If the vehicle does not hold the equipment and liquids set out in the table in Item 2 (mass when ready to drive), the loading capacity/additional load (Item 5) can be increased by this value.



Tow coupling

3.4 Towing fixture *

The maximum towing weight, trailer load and tow bar load are set out in **Chapter 14 "Technical Data"**.

Please ensure that the permissible tow bar load, maximum towing weight and rear axle load for the vehicle are not exceeded, especially when you are loading the rear garage. Simultaneous use of the tow-bar and the rear carrier* is not permitted.

While manoeuvring to hitch and unhitch loads, ensure that no-one is standing between the van and the trailer.

Due to stipulations by the manufacturer of the basic vehicle and the fixing of the so-called D value of the towing fixture no additional loading of the towing loads is possible.

If you wish to increase the trailer load, a stronger motor is required.

3.5 Externally mounted fixtures

Registering accessories in the vehicle's documents

- Have your HOBBY dealer mount your externally mounted fixtures.
- Take your van to a technical support organisation or technical service provider (e.g. MOT).
- The technical support organisation will approve the fittings and draw up a corresponding expertise.
  (road traffic authorities)
- Take the expertise and the Motor Vehicle Registration Certificate Part I to the national vehicle registration authority (Driver & Vehicle Licensing Agency). They will enter the change in the registration document.

If applicable, please observe national regulations in foreign countries. Please remember that the tow coupling, motorcycle carrier, pneumatic suspension and/or additional leaf springs must be entered in the registration document.

Please note that mounting additional equipment reduces the load your van can carry.

3.6 Automatic transmission *

As an option, your van can be equipped with an automatic transmission (Comfort-Matic) which has two methods of operation: MANUAL/gearshift and AUTO(MATIC). Since the clutch is engaged and released by means of an electro-hydraulic unit that is controlled by the transmission‘s control unit, the clutch pedal is superfluous and, therefore, it has been removed. Both the selected method of operation as well as the gear you are driving in are shown on the multifunction display panel.

FIAT Comfort-Matic

The gearshift lever on the dashboard has three fixed positions:
– the centre position for selecting the forward gear,
– N for selecting the neutral position (engine is idle),
– R for selecting the reverse gear.

Starting from the centre position, which corresponds to the forward gear, the lever can be moved as follows:
– forwards (- position) to select a lower gear (i.e. shifting down),
– backwards (+ position) to select a higher gear,
– to the left (A/M position) to select automatic or manual mode, alternatively.

These three positions are not fixed, i.e. after the lever has been moved it jumps back to the centre position.

Manual operation
This method of operation allows the driver to select a suitable gear according to the conditions under which the vehicle is being driven. Switch gears as follows:

- Move the lever in the direction of (+) to shift up or in the direction of (-) to shift down. Do not let go of the gas pedal while you are shifting gears.

The system will only allow you to shift when such an action will not prevent the motor or the transmission from functioning correctly. As soon as the motor reaches idle speed, the system will automatically shift down (e.g. when braking).

Automatic operation
The lever must be pressed in the direction of A/M in order to switch automatic operation on or off. The system automatically shifts gears on the basis of the vehicle‘s speed, the engine rpm and the position of the gas pedal. If necessary, the system will shift down one or more gears when you press the gas pedal to the floorboard. This will provide you with the required performance and torque to achieve the acceleration you require.

Parking the vehicle

To ensure that the vehicle is safely parked, step on the brake pedal and then shift into either first gear or reverse (R). Furthermore, when parking on a slope, you must also pull the hand brake.

Never leave the vehicle when the transmission is in neutral (N).

If the vehicle is not moving and you have already shifted into gear, always step on the brake pedal until you have decided to start driving. Only then should you release the brake pedal and slowly step on the gas pedal.

If the vehicle is not moving and the engine is running for a longer period of time, we recommend that you shift to neutral (N).

Do not use the gas pedal as a means of holding the vehicle in one spot (e.g. on a slope). Instead, use the brake pedal and step on the gas only when you start to drive.

If you want to shift into first gear when in reverse gear (R) or vice versa, the gearshift lever may only be moved when the vehicle is standing completely still and you are stepping on the brake pedal.

For further information, please refer to the operating instructions for the base vehicle. Please familiarise yourself sufficiently with the operation of the automatic transmission before you use your vehicle the first time.

Chapter 4: Wheels and Tyres

4.1 Wheels

The following applies for tyre bolts
If you are driving a new vehicle, or after changing a tyre, tighten the wheel bolts or nuts after you have driven the first 50 km and then again after the following 100 km. For your safety, do not use any tyres or fixing material other than what was originally stipulated. Wheel bolts and nuts should then be checked regularly to ensure that they fit tightly.

Tightening torque for wheel nuts and bolts:

Rim size	Fiat Ducato
16''	180 Nm
15''	160 Nm

Check the tightening torques every 5,000 km or at least once a year.

4.2 Tyres

Use only tyres that have been entered in the vehicle's documents. The vehicle is restricted to the size of the tyres with which it was produced and homologated. Subsequent changes to the tyres are not permitted.

- Check tyres regularly to ensure that the tread is worn down evenly; check tread depth; check for external damages.
- Always use the same make and model of tyres (summer or winter tyres).
- Drive carefully on new tyres for a stretch of approx. 100 km to enable them to develop a full road grip.

Driving to protect your tyres
- Avoid braking sharply and racing starts.
- Avoid long drives on poor roads.
- Never drive an overloaded vehicle.

Tubeless tyres have been mounted on your HOBBY van. Under no circumstances may tubes be inserted in these tyres!

Winter tyres are mandatory in many EU countries!
If you are driving in snow, ice or sludge in one of these countries, your vehicle must be fitted with tyres that have the "M+S" symbol. You may be fined if you ignore this legal requirement.

Snow chains

Never drive faster than 50 km/h.

Do not use snow chains on snow-free roads.

Snow chains can only be mounted to tyres that are just as large as the tyres originally mounted on your vehicle.

Snow chains may only be mounted on the front drive wheels; it is strictly forbidden to mount snow chains on the rear wheels.

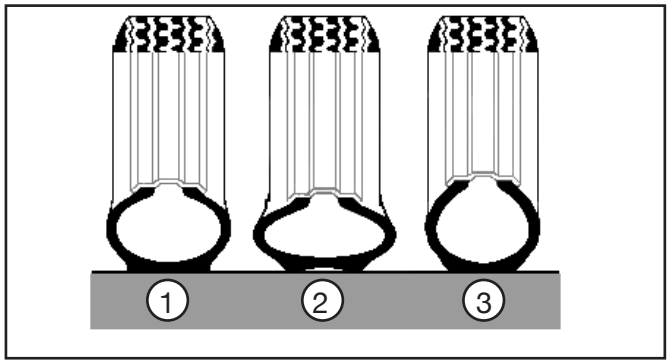
Ornamental hub caps must be removed before putting on snow chains.

4.3 Tyre pressure

The inflation pressure of all tyres as well as the spare tyre should be checked approx. every 4 weeks and before you go on longer journeys.

The following applies when checking inflation pressure:

- Check the pressure only when the tyre is cold.
- If checking or correcting the pressure of a warm tyre, the pressure must be 0.3 bar higher than for a cold tyre.
- Check and fix tyre pressure every four weeks (but at least every three months) and before every drive.
- If driving on low tyre pressure is unavoidable (i.e., from the campsite to the nearest service station) you should drive at a maximum speed of 20 km/h.



Different tyre pressures

The following applies for inflation pressure:

- correct inflation pressure ①.
- inflation pressure too low ②.
- inflation pressure too high ③.

If the pressure is too low, this may cause overheating of the tyre, possibly resulting in severe damage to the tyre.

For the correct inflation pressure, please refer to the table in the chapter on “Technical Data“ or the operating instructions for the basic vehicle.

4.4 Tyre profile depth and age of tyres

Replace your tyres as soon as the tread depth is only 1.6 mm.

The minimum tread depth gives you only the barest amount of safety while driving. The following recommendations must be observed:
Safety limit in summer: 3.0 mm
Safety limit in winter: 4.0 mm
Tyres may never be exchanged from one side to the other, i.e. from the right-hand side of the vehicle to the left-hand side and vice versa.

Tyres age even if they are used seldom or not at all.

Tyre manufacturers‘ recommendations

- Irrespective of their tread depth, tyres should be changed every 6 years.
- Avoid hard impacts against curbs, potholes or other obstacles.

DOT number

Age of tyres

Tyres should never be more than six (6) years old as the material becomes brittle with age and when the vehicle is not used for a longer period of time. The four-digit DOT number on the side of the tyre (it may be necessary to check the inner side) indicates the date it was manufactured. The first two digits refer to the week, the last two digits to the year of manufacture.

Example:
DOT 1616 means week 16 in the year of manufacture (here: 2016).

4.5 Wheel rims

Only use the rims noted in the registration documents. Should you wish to use other rims, please note the following.

The following applies when using other wheel rims:

- The rim size may not be subsequently changed.
- construction,
- injection depth and
- The load bearing capacity must be sufficient for the permissible total axle weight.
- The cone of the fastening screw must correspond to the construction of the wheel rim. (cone washer,spherical wheel bolt)

Adaptations are only permitted if these have been released by the manufacturer.

4.6 Changing a tyre

Preparing to change the tyre

- Park the vehicle on a surface that is as level and firm as possible.
- Should there be a blowout on a public road, switch on the warning lights and set up the warning triangle.
- Pull the hand brake, shift to first gear and align the wheels so that they are straight or, if driving an automatic, set the gear to P.
- If necessary, place chocks in front of and behind the wheel that is still in good order so as to secure the vehicle.

Changing a tyre

- Place a firm base, such as a piece of wood, underneath the car jack if the vehicle is on soft ground.
- Insert the car jack into the appropriate mounting holes.
- Turn the wheel spanner one full circle to loosen the wheel mounting screws, but do not remove them.
- Jack up the vehicle until the wheel is 2 -3 cm above the ground.
- Reset the car jack if it slips while the vehicle is being jacked up.
- Remove the wheel mounting screws and lift off the tyre.
- Place the spare tyre (not included in the scope of delivery) on the wheel hub and align it.
- Screw the bolts on and tighten them in a diagonal sequence.
- Lower the car jack and remove it.
- Tighten the wheel mounting screws evenly with the wheel spanner. Please refer to the operating instructions for the base vehicle for the specified value of the tightening torque of the wheel mounting screws.

After changing the tyre, the wheel screws must be examined (after a 50 km drive) to ensure that they are tight enough (tighten if necessary).

The car jack (not included in the scope of delivery) may only be inserted in the appropriate mounting holes! If the car jack is attached in other places, this may cause damage to the vehicle or even accidents if the vehicle falls off the jack.

The car jack is to be used only for changing tyres. It may never be used when working underneath the vehicle! Danger of death!

When changing a tyre, please also observe the vehicle manufacturer‘s operating instructions.

You should have a functional spare tyre available at all times. Therefore, have the spare tyre replaced without delay.

Fast tyre repair kit

4.7 Fast tyre repair kit

The standard version of your van does not have a spare tyre. Instead, a fast tyre repair kit is included.

Do not use the fast tyre repair kit if the tyre was damaged by being driven when insufficiently inflated. If the tyre rim is damaged (i.e. if the groove is deformed so that air escapes) it is not possible to repair the tyre. Small punctures, especially in the tyre tread (with a max. diameter of 4 mm) can be sealed using the fast tyre repair kit. Do not remove foreign matter (e.g. a screw or nail) from the tyre.

The fast tyre repair kit can be used when the outside temperature ranges from -40°C to + 50°C.

Please refer to the enclosed guidelines for instructions on how to use the fast tyre repair kit.

There is an expiry date on the sealant. Therefore, please note this date. It is not possible to guarantee that the tyre repair kit will function properly if the sealant has expired.

Chapter 5: Exterior Structure

5.1 Ventilation

The following applies for ventilation:
Ventilation is important if you want to feel comfortable in your van. Draft-free ventilation is integrated in your van via the traction unit; de-aerating via the roof bonnets. Do not interfere with their mode of operation!

⚠ Never cover the safety ventilation, not even partially.

☞ We recommend that you open the roof bonnets whenever you live in the van.

Watery vapour is produced while cooking, from wet clothes, etc. Every person transpires up to 35 g of water per hour. Therefore, depending on the relative humidity, the windows and skylights must be opened for further ventilation (see also “Operating in Winter“).

Ventilation grill, refrigerator

Refrigerator

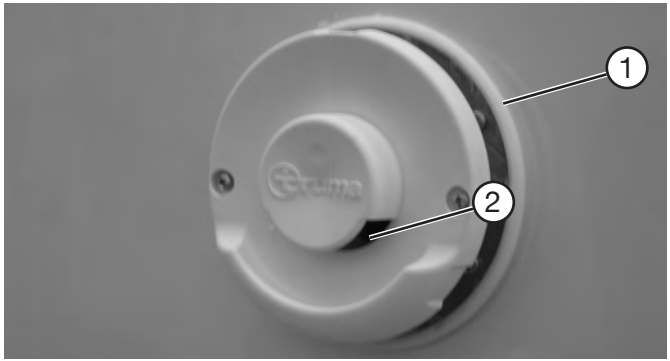
The refrigerator compressor is supplied with fresh air via ventilation grills ① in the floor.

The ventilation grills are located underneath the kitchen unit and, depending on the model, may jut into the clothes cupboard.

Ventilation and de-aerating of the compressor is a prerequisite for sufficient cooling capacity. The ventilation grills must not be covered up or blocked. Do not overload the drawers in the kitchen unit and never place any clothes or other objects over the ventilation grill in the clothes cupboard.

Do not block the refrigerator's ventilation grill so as not to restrict cooling performance and the functions of the refrigerator.

We recommend that you park the van in the shade if the temperature outside is very high.



Heating flue

Heating

Power for the heating system is supplied from outside using combustion air ①. At the same time, the exhaust air from the heating system ② is ducted outside.

Blocked ventilation openings can cause malfunctions and may channel exhaust fumes inside the van. **Danger of suffocation!**
When operating in winter ensure that the chimney outlet is not blocked.

5.2 Opening and closing doors and flaps

Keys to the vehicle

The following keys are supplied with the van:

- two keys to fit the following locks on the base vehicle:
  - driver‘s and passenger‘s doors
  - sliding door
  - rear doors
  - patrol flap

  a code card.

Note the manufacturer‘s operating instructions for the basic vehicle.

- two keys that fit the following locks on the structure:
  - toilet flap,
  - fresh water filler neck

In addition, a self-adhesive aluminium plate is included in delivery, engraved with the key number of the base vehicle.

Outside sliding door

Outside sliding door

The lock on the sliding door is connected to the central locking system.

Opening

- Use key to unlock door.
- Pull on door handle ①.
- Pull the door open as far as it will go until you can feel it lock into place.

Closing

- Pull on the door handle ① to unlock it.
- Pull the door shut until it is completely closed.
- Lock the door with the key.

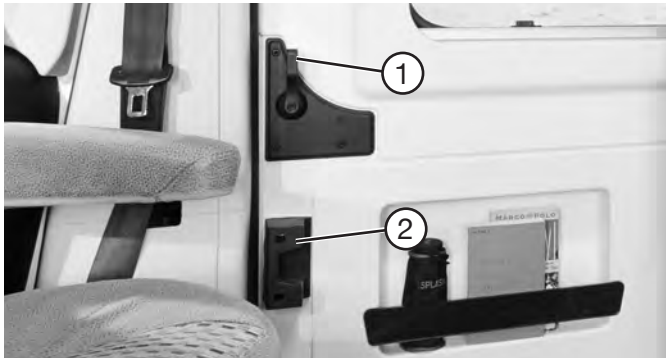
The window in the sliding door must always be closed before opening or closing the door.

Ensure that neither people nor pets will be hurt when opening or closing the door.

The entry door is your escape route in an emergency. Therefore, never block the door from the outside!

The sliding door must always be kept closed and locked while driving.

To avoid damage, do not use the track for the insect screen as assistance when entering the van.



Inside sliding door

Inside sliding door

Opening

- Push the latch ① to the right and use the handle ② to open the sliding door as far as it will go.

Closing

- Pull the handle ② of the door closed until it locks into place and the door is completely shut.

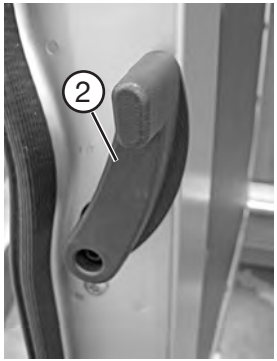
Rear door from the outside

Rear doors

Rear doors from the outside (right rear door)

Opening

- Unlatch the lock with the key.
- Pull on the door handle ① .
- Open the door as far as it will go.



Rear door from the inside

Rear door from the inside (left rear door)

The left rear door can only be opened after the right rear door has been opened.

Opening

- Pull the lever ② on the inside of the left door to unlock the door. Then open the door as far as it will go.

If the rear doors are to be opened by 180°, the buttons ③ on the inside of the doors must be pressed and held while opening each door by a further 90°. The buttons must also be pressed when closing the doors.

If the rear doors have been opened by 180°, particular attention must be paid to traffic on the road or passing cyclists.

If a bicycle carrier* has been mounted, opening the rear doors by 180° may damage the van.

When closing the rear doors, ensure that the doors snap shut and lock them.

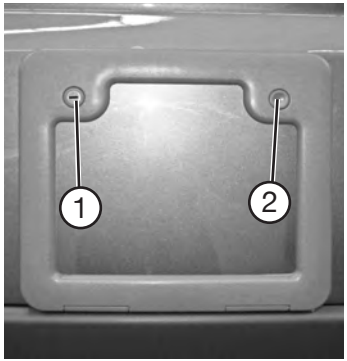
Insect screen (plisse)

Insect screen (plissé)*

Push the insect screen on the screen door to the desired position. To open, carefully guide the rail back to the original position in order to fold the pleated screen correctly.

① Insect screen on screen door

The insect screen may only be pulled out if the screen door is open. Only shut the screen door after the insect screen has been pushed back into its original position.



Toilet flap

Toilet flap

Opening

- Use key to unlock flap ①.
- Press both buttons (① and ②) and open flap.

Closing

- Press flap until it locks into place.
- Use key to lock flap ①.

Cover flap

Cover flap

The access to water, gas or electrical components is covered by these flaps; for example:

the fresh water filter neck

TV external socket and antenna terminal* in the outer tent

GAS external gas socket*

CEE external socket

Opening

- Grasp the cover flap at the bottom of the latch and pull it up.

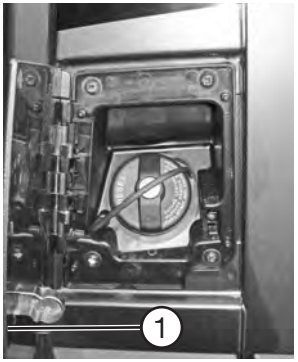
Closing

- Grasp the latch of the cover flap and close it until it clicks into place.

Please refer to the appropriate chapters on water, gas and electricity for information on handling the individual components.

When driving, the cover flaps must always be firmly shut.

Never fill diesel into the fresh water tank.



Petrol cap

Petrol filler neck

The black petrol cap is covered by a flap located on the left side of the vehicle behind the driver's door in the lower section of the B-pillar.

Opening

- Open the flap by placing a finger in the notch ① and pulling out/forwards.

Closing

- Push the flap until it locks.

Please refer to the separate operating instructions from FIAT for information on how to operate the petrol cap.

Extended entrance step

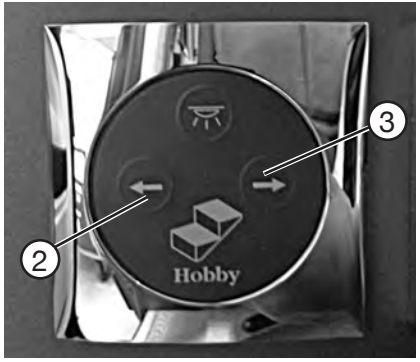
5.3 Entrance step

The vans are equipped with an electrically extendable entrance step ①.

Do not step on the entrance step until it has been completely extended!

Mind the different heights of the steps and ensure that the ground in front of the entrance is firm and level.

Following a short delay after the motor is started, the step is automatically retracted.



Retracted entrance step

To open

- Press the switch ② in the entrance area.
  The entrance step will be extended automatically.

To close

- Press the switch ③ in the entrance area.
  The entrance step will be retracted automatically.

Make sure that when you press the switch you are not standing in the way of the entrance step as it is extended. **You could be seriously injured!**

Continue pressing the switch until the step has completely folded in or out.

If, due to dirt or frost, the entrance step does not function properly or at all, the hinges must be cleaned or defrosted.

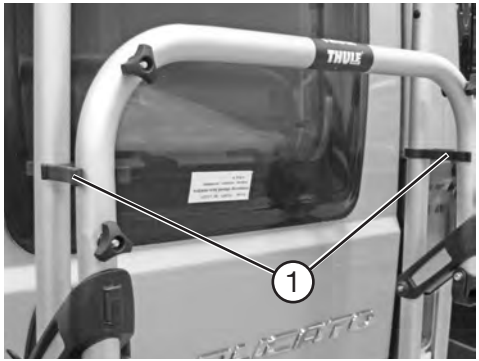
Bicycle carrier, loaded

5.4 Bicycle carrier *

Please read the separate operating instructions for the bicycle carrier before using it.

The van's handling when driving is significantly different when the bicycle carrier is in use. The driving speed should be adjusted accordingly to take this into consideration:

- The driver is responsible for the secure fastening of the bicycles. The loading system must be folded up and secured by means of the straps at hand, even if nothing has been loaded.
- Ensure that the existing lighting equipment is not completely or partially obscured by any loads.



Bicycle carrier, secured

The maximum permissible loading capacity for the bicycle carrier is 35 kg..

If the rear-mounted bicycle carrier is not required, it must be folded up and secured. To do this, use the separate fastenings ① (may be in the accessory kit).

When driving with bicycles, the bicycle carrier must be unfolded and the straps ② **(page 41)** must be firmly lashed. The front and back wheels of each bicycle must be firmly lashed using the straps ② **(page 41)**. The fastenings included in the accessory kit are used for the frame.

When opening the rear doors by 180° **(see p. 36 Rear doors)** the van may be damaged by the bicycle carrier.

Awning

5.5 Sun awning *

As option, your van can be fitted with an awning attached to the roof.

- An awning offers protection from the sun, not against the elements.
- Do not place people or obstacles in the extension/retraction area of the awning.
- The awning winding mechanism is fitted with a mechanical block control to limit the extent to which it can be extended. Never attempt to exceed the block control by force.
- Always support the awning with the integrated struts when extended.
- The awning must always be completely retracted and secured before driving.

Extending

- Insert the hook on the crank into the grommet on the winding mechanism.
- Hold the crank with one hand on the upper twist grip and the other on the lower twist grip. During the operating procedure gently pull the crank towards you and hold it as vertically in the grommet as possible.
- Turn the connecting rod clockwise until the awning has been rolled out about 1 m.
- Unfold the telescopic rods on the inside of the drop tube and use them to support the awning.
- Only then should you roll out the awning to the desired position.
- Remove the crank.

Retracting

- Insert the hook on the crank into the grommet on the winding mechanism.
- Turn the connecting rod counter-clockwise until the awning has been rolled in except for the last meter.
- Retract the telescopic rods, fold them up and secure them.
- Only then should you roll in the awning completely and secure it.
- Remove the crank and store it in the vehicle.

If the canvas is slack when extended, retract the awning until the canvas is tightly stretched again.

Please read the manufacturer's separate operating instructions before use.

Chapter 6: Interior Structure

6.1 Opening and closing doors, flaps and drawers

Furniture doors with a locking mechanism

Furniture doors with a locking mechanism

Stowage cabinets, clothes cupboard and kitchen drawers
Opening

- Press the pushbutton ① to unlock the flap/drawer.
- Pull on the handle until the flap opens.

Closing

- Use the handle to close the flap/drawer until it shuts and noticeably locks itself into place. Should this not be the case, the flap must be locked by hand.

⚠ Store only light objects in the upper stowage cabinets.

☞ Please observe the maximum load of 15 kg per drawer.

Mirror cabinets

Door of the gas-bottle container

Mirror cabinets, washroom

Opening

- Open the door of the mirror cabinet by pressing the lower edge from behind.

Closing

- Push the door of the mirror cabinet back to its original position until it noticeably locks itself into place.

Door of the gas-bottle container

Opening

- Pull the ring ① out of the recess and open the door.

Closing

- Press the door firmly into the frame until you can feel it lock into place.

When the gas bottles are attached, the door of the gas-bottle container should always be firmly closed while driving or when using the van as living space.

Base cabinet for washbasin

Simple furniture doors

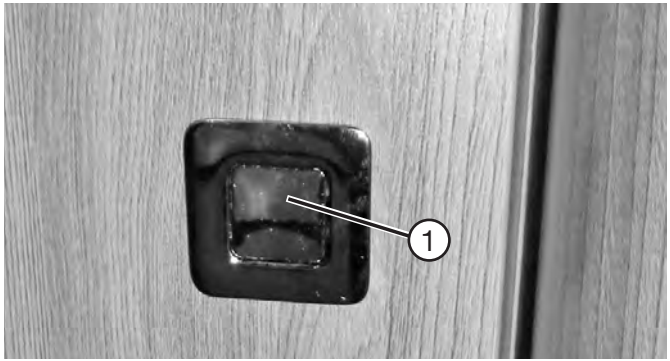
Opening

- Pull on the handle and swing the door open.

Closing

- Use the handle to press the door shut.

The door cannot be locked when closed. Therefore, only light-weight objects should be stored in the cabinet.



Pushlock

Doors with push locks

Opening

- Press the push-lock ① until the knob jumps up.
- Pull carefully to open the door.

Closing

- Close the door.
- Depress the push lock until the knob locks into place and the door is fastened.

Sliding door in washroom

Fig. 2

Retaining strap

Sliding doors

Bathroom

Opening

- Grasp the handle/frame of the sliding doors and push them open.

Closing

- Grasp the handle/frame of the door and push it closed until it clicks into place.

When driving, the shower doors must be secured by means of the retaining strap **(see Fig. 2**).

Adjusting knob

Washroom door

Opening

- Turn the knob ① to the right until the mechanism opens. Then use the knob ① to carefully push the sliding door open along the guide rail.

Closing

- Use the knob ① to carefully pull the sliding door shut until you feel the resistance. Then turn the knob to the right and shut the sliding door as far as it will go. The sliding door must then be locked.

Extendable flat screen

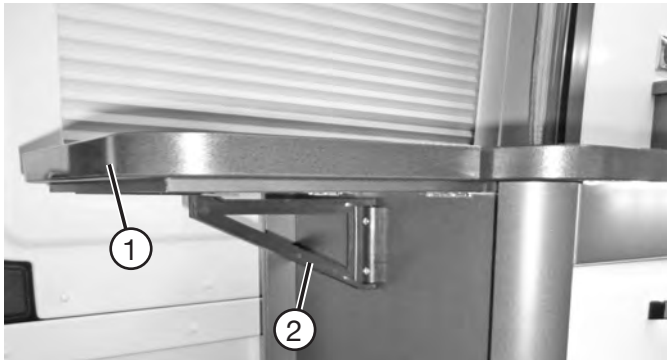
6.2 Television holder*

230 V power sockets and an aerial socket for the TV and/or receiver are located directly adjacent to the holder.

- To unlock, press the metal rail ① and, at the same time, extend the TV mount.
- To retract the mount, push it back to its original position until it is noticeably locked into place.

Lock the media unit or TV holder before driving.

The mounted TV may not weigh more than 8 kg. When driving, we recommend that you remove the TV from the mount and store it securely.



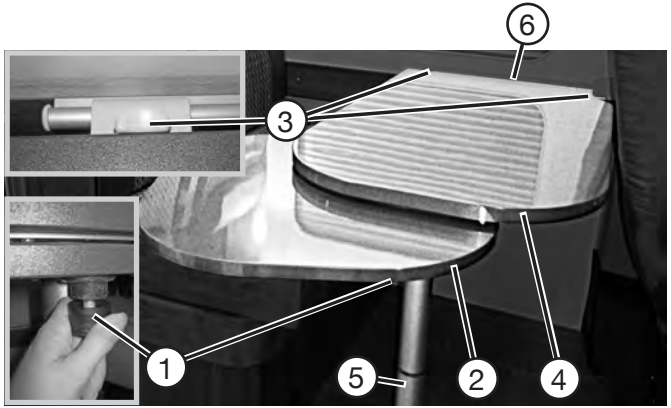
Worktop extension

6.3 Worktop extension for the kitchen

- Use one hand to bring the movable part ① to a horizontal position.
- With the other hand, fold the lever ② by 90° beneath the movable part to support the extension.

To fold down the extension, carry out this procedure in reverse, ensuring that the movable part attaches itself to the magnet.

The worktop extension can support a maximum load of 5 kg.



Hanging table with pivotable table top

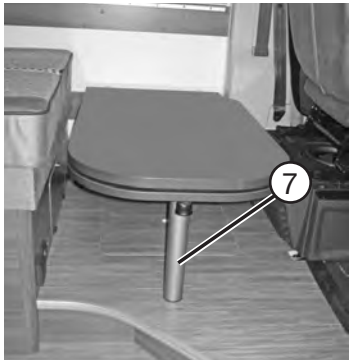
6.4 Tables

Hanging table

The lower table top of the hanging table can be swung out. To set up the emergency bed in the seating arrangement, lower the hanging table.

To swing out the table top

- Pull the locking pin ①.
- Swivel the lower table top ② to the desired position.



Lowered hanging table

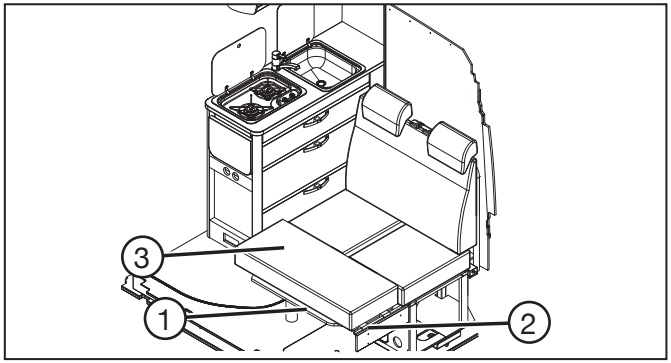
Lowering the table

- Fully retract the lower, pivotable table top ② until it locks into place by itself.
- Press the lock ③ down
- Raise the front end of the table top ④ by approx. 30°.
- Pull down the lower section of the table foot ⑤ and remove it.
- Pull the table top out of the upper wall bracket ⑥.
- Hang the table into the lower wall bracket . Push the lock ③ back up again to lock the table securely in the bracket.
- Place the shortened supporting leg ⑦ at the front edge of the table top on the floor.

6.5 Seating arrangements and sleeping areas

Emergency bed in the seating arrangement*

The seating arrangement can be converted to an emergency bed.



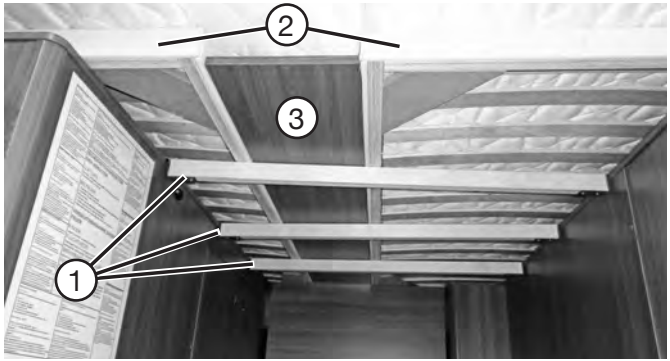
Rearranging the cushions

To convert

- Hook the table ① into the lower guiding rail ② **(see 6.4 Tables).**
- Pull the seating bench and cushions apart at the end towards the entrance **(see 6.12 Seats in the superstructure)**.
- Turn the driver's seat 180° **(see 6.12 Seats in the driver's cab)**.
- Place the additional cushion ③ on the table.

Single beds at rear end

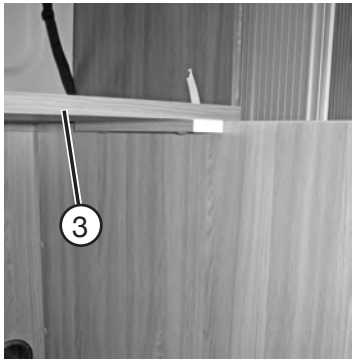
Individual beds in the rear



Position of the crossbeams, slatted frames and extension board ③

To convert beds

- Distribute the crossbeams ① evenly between the two bed frames to provide optimal support for the slatted frames ②.
- Then place the two slatted frames ② on the crossbeams, taking care to ensure that the slanted side of the bed faces the front of the vehicle and the cushioning on the frame faces the centre of the vehicle.



Positioning the extension board

- Place the extension board ③ between the two slatted frames.
  There is a bar on the back of the extension board to ensure that the board does not slip. Place it against the step so that it lies in the direction of the front of the vehicle.

Additional cushion

- Finally, place the mattresses on the left and right, again taking note of the slant.
  If necessary, place the additional cushion ④ for the extension of the beds between the mattresses, making one large surface for sleeping.

If the upper beds are used by small children, take care to ensure that they do not fall off!

Double bed at rear end

Transversal bed in the rear

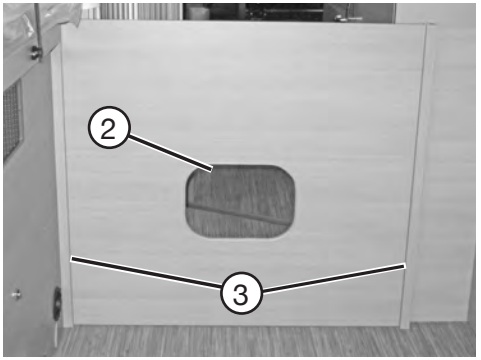
Positioning the slatted frames

To convert bed

- First step: place the two slatted frames transversally to the vehicle on the base so that they are resting on the supporting shelves in the direction of the front of the vehicle, taking care to ensure that the cushioned sides of the frame are on the outer sides of the bed.

Aligning the mattresses

- Then place the three mattresses lengthwise to the vehicle, whereby the two mattresses with the slants ① are placed on the left and right by the rear doors.

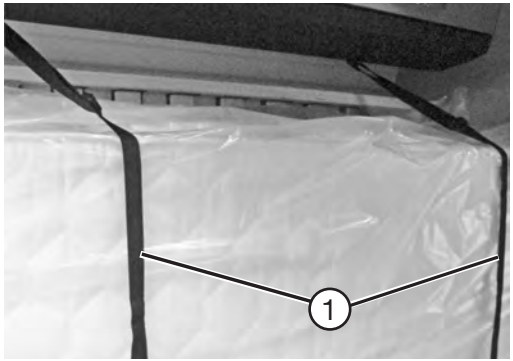


Climbing assistance

Climbing into the transversal bed in the rear

- Climb into the transversal bed in the rear ② through the gap in the bulkhead partition, taking care to ensure that the bulkhead partition is anchored on both sides in the guide rails ③ .

⚠ Take care to ensure that small children do not fall out of the beds, especially if the rear doors are open.



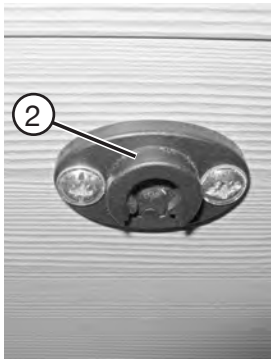
Ensuring safe transport while driving

Converting beds into storage space (for individual and transversal beds)

The bed can be fastened to the side wall to obtain additional storage space in the rear.

Fastening the bed

- First, place the slatted frames on the supporting shelves on the side wall, taking care to ensure that the cushioned sides of the frames face downwards.
- Then place the mattresses against them.

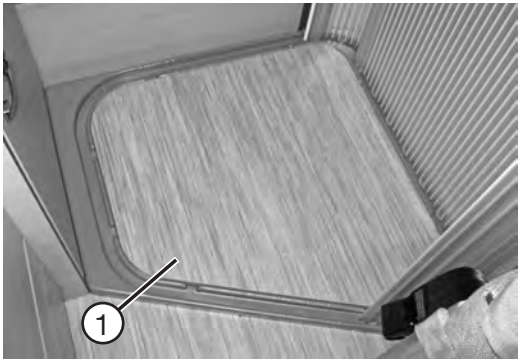


Retaining strap and counterpart

- Lash the mattresses and slatted frames with the fastening straps ① .
- Place the fastening straps over the gap and insert them in the counterpart ② until they lock together.
- Tighten the retaining straps.

During transport, the fastening straps must be securely lashed; they must not hang down.

If nothing is being transported and the straps are not required, they can be removed completely by guiding the ends of the straps out of their corresponding gap.



Shower tray

6.6 Washroom (Bathroom)

A removable insert ① has been placed in the shower tray to protect it and make it easier to walk across.

The insert must be removed from the shower tray before taking a shower.

Shower flap

Shower flap in compact bathroom

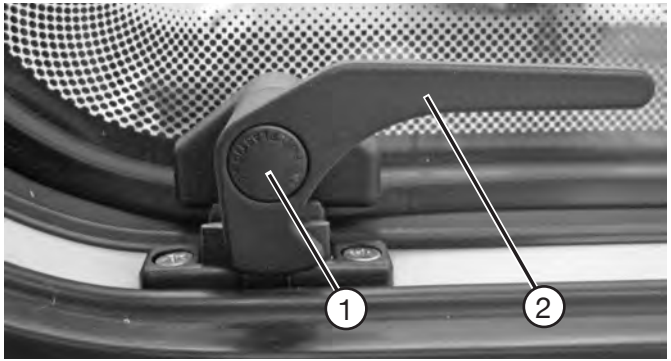
Before showering, tilt the shower flap to keep the water from running down the bathroom wall.

To set up

- Carefully raise the lower edge of both sides of the shower flap until it stays in place of its own accord.

To fold down

- Apply gentle pressure to the shower flap to guide it back to its original position.



Window latch

6.7 Windows

Depending on how the window has been constructed, it has one or more latches with locking knobs ①. To open these window latches, press the locking knobs ① .

Knockout windows with locking hooks

Opening

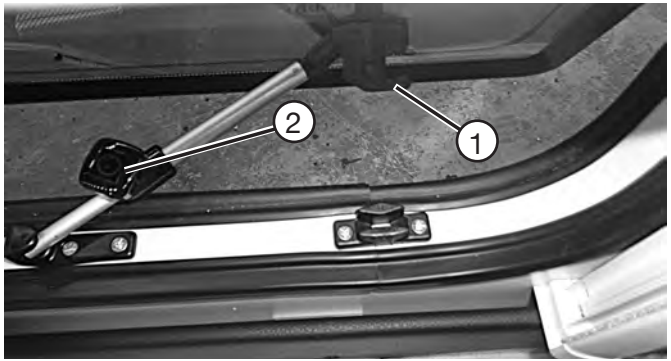
- Turn the latch ② by 90°.
- Press the window latch outwards until you hear it click.The window will automatically remain in this position. The width of the opening is adjustable in several stages.

Closing

- Raise the window slightly so that the hook unlocks.
- Close the window.
- Turn the latch ② to the original position so that it clasps behind the brackets and pull the pane into the seal.

Windows must be shut while driving. Never use de-icing spray or an ice scraper for the windows in the van.

High humidity may cause a light mist to form within the window panes. This will disappear by itself when the weather is drier.



Fully adjustable window stays

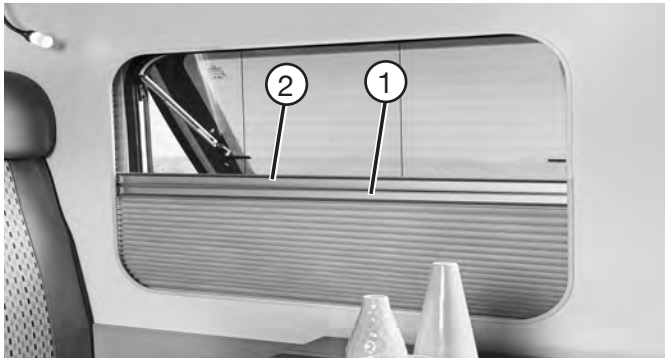
Fully adjustable window stays

Opening

- Turn all latches ① by 90°.
- Press the window latch outwards with your hand until it is open as far as you would like. Then use your other hand to tighten the turn screw ② until you feel the resistance and the window is held in place.

Closing

- Loosen the turn screw ② to allow you to shut the window.
- Turn all latches ① back to their original position so that they clasp behind the brackets and pull the pane into the seal.



Sunshade/insect screen

Sunshade/insect screen

Sunshades and insect screens are integrated in the window from and fully adjustable.

Closing

- Move the handle for the sunshade ① or for the insect screen ② slowly and evenly to the desired position.

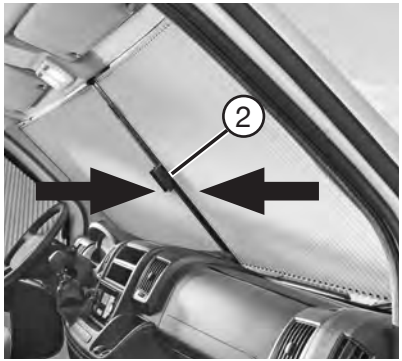
Opening

- Use the handle to push the shade up or down slowly and evenly.

To combine

- Pull the sunshade up slowly and evenly, then pull the insect screen down to the desired position.

To avoid consequential damage, leave the shades open when the van is not in use.



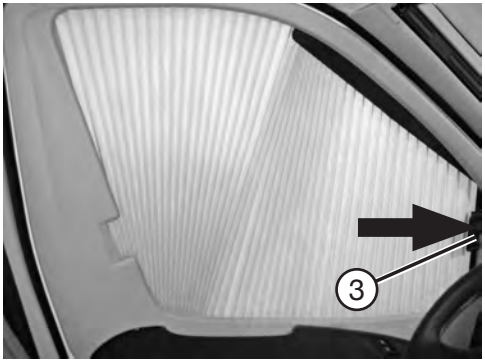
Front system

6.8 Dimming system for driver's cabin *

The dimming shades may only be drawn when the vehicle is standing and the motor has been turned off. Before starting your drive, you must fold up the entire system and lock it.

Open the dimming system whenever you are not using your van, as otherwise it will be permanently damaged by the effects of heat and UV rays.

The dimming system may never be used as a sunshade or closed while driving.



Side system

Front system

- Press the locks ① together to open the locking mechanism.
- Pull the handles ② in the middle together slowly and evenly. The magnetic lock will lock automatically.

Side system

- Press the locks ① together to open the locking mechanism.
- Guide the handle ③ slowly and evenly to the stop bar. The magnetic lock will lock automatically.

Thermal curtain (photo: Optima)

6.9 Thermal curtain for driver's cab*

To install

- There is a cover flap along the top edge of the curtain that must be pushed between the headliner and the sun visor.
- Fasten the pushbuttons to their counterparts on the B-pillar. This ensures that the curtain is closed tightly and has sufficient support.

⚠ Before driving, the thermal curtain must be entirely removed from the driver's cab and stored in the vehicle.

☞ The thermal curtain has a flap that enables you to reach the radio and the ventilation. The flap is closed by means of a magnetic lock and a button to hold it closed.

If there is no frost outside and you are in a bit of a hurry, it is enough to simply set up the curtain and push the cover flap between the headliner and the sun visor. Then there is no need to fasten the sides of the curtain.

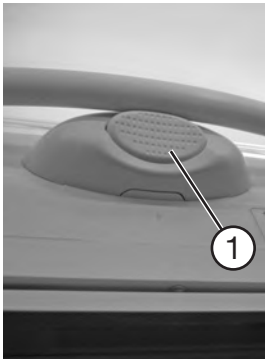
6.10 Skylight

Safety instructions

- Never open the skylight in strong winds/rain/hail, etc. or if the temperature outside is below -20°C!
- Never use force to open roof bonnets when there is frost or snow as the hinges and opening mechanism might break.
- Remove snow, ice or excessive dirt before opening. Ensure there is sufficient room before opening the skylight under trees, in garages, etc.
- Do not stand on the skylight.
- Close and bolt the skylight before driving. Open the insect screen and pleated material (resting position).
- If the sunlight is very strong, pull the sunshade only 3/4 closed, otherwise there is a danger of heat build-up.

The vents for ventilation must always remain open! Never shut or cover up these vents!

Large roof bonnet



Control pin

Opening

- This roof bonnet can be opened in the opposite direction to traffic. Press the locking knob ① and use the adjusting lever to move the roof bonnet to the desired position.

Closing

- Guide the adjusting lever along the guide rail and close the roof bonnet. The bonnet will lock when the lever hooks into place behind the locking knob ① .

Insect screens and shades (plissés)

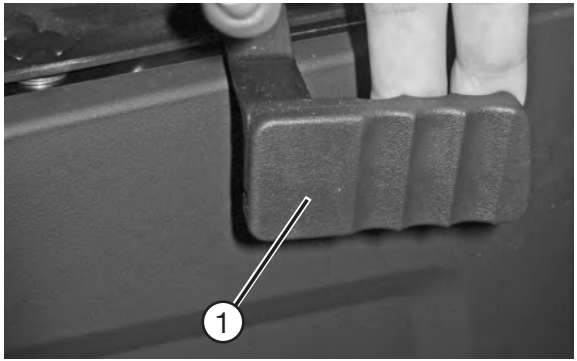
Both plissés are fully adjustable by sliding them horizontally from side to side.

Driver's seat

6.11 Seats in the driver's cabin

All of the vans have pivoting driver's and passenger's seats, which can be used to extend the number of seats available in the superstructure. To operate these pivoting seats, please refer to the operating instructions for the base vehicle.

- Before driving turn all swivelling seats in to face in the driving direction and lock them into place.
- Leave the seats locked to face in the driving direction while driving. Do not swivel them.
- When the vehicle is stationary: when swivelling the driver's seat make sure that the handbrake is not released by accident.



Lever for turning the seats

The lever ① for turning the seat is located on the inner edge of the seats in the driver's cab.

Swivelling seats

- Put the armrests up.
- Move the seat to the middle position.
- Release the lever to swivel the seat. The seat will be released from the locking position.
- Push the seat belt buckle down to avoid damaging it.
- Swivel the seat to the desired position.

Seating bench in the superstructure

6.12 Construction of the seats

Cushion fastenings

Seat cushions are held in place by an anti-slip mat.

Ensure that the seat cushions and backrests are fastened securely and correctly.

Widening the seating bench

The seating bench can be widened by carefully pulling out the movable part ① together with the cushion towards the sliding door until it goes no further.

Seatbelts

6.13 Seatbelts in the van

The seating arrangements are fitted with safety belts.

Buckling the seatbelt

Do not twist the seatbelt.

- Grasp the tongue and insert it in the lock of the seatbelt until you hear it snap shut.
- Guide the upper part of the seatbelt over your shoulder and diagonally across your chest.
- The lower part of the seatbelt fits across your hips.

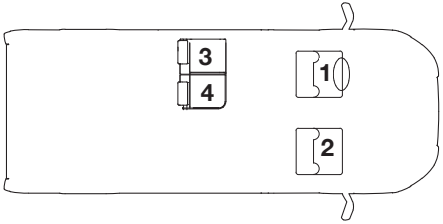
Unbuckling the seatbelt

- Press the button on the lock of the seatbelt to unlock the tongue.

⚠

- Fasten seat belts before driving and keep them fastened while driving.
- Do not damage or jam the seatbelts. Damaged seatbelts should be replaced by an authorised workshop.
- Do not alter the seatbelt fixings; the automatic retraction system or the buckles.
- Only use each seatbelt for one adult. Do not fasten objects and people using only one seatbelt.
- Seatbelts alone are not suitable for persons under 150 cm tall. In such cases use additional restraining equipment.
- Replace seatbelts after an accident.
- Do not twist the seatbelt; it should fit closely to your body.

6.14 Overview of the seating arrangements



Seats 1 - 4: may be used while driving.

Chapter 7: Electrical Installations

7.1 Safety instructions

The installation of electrical devices in HOBBY's vans has been carried out in accordance with the valid regulations.

- Do not remove the signs on electrical components giving safety instructions or danger warnings.
- The installation spaces around electrical equipment such as distribution fuse boards, electric power supply, etc., may not be used as additional storage spaces.
- Smoking and naked flame are forbidden when checking electrical equipment.
- Only authorised specialists may work on the electrical system.
- Inexpert handling of the vehicle‘s electrical system may endanger your own life as well as that of others.
- To connect to an external 230 V mains connection, use only a weather-proof, 3-wire extension cord with a CEE plug and connector.

7.2 Elements of the electrical system

Advice and instructions

Important

- The van's electric system should preferably be inspected within a period of less than three years. If the van is used frequently, a competent electrician should inspect the electric system every year.
- Any changes to the electrical installations may only be carried out by a professional electrician.
- Disconnect the battery and switch off the 230V mains before carrying out any maintenance work.

Batteries

- Please observe the battery manufacturer’s operating instructions.
- The acid in the battery is poisonous and corrosive. Avoid contact with eyes and skin.
- The completely discharged battery must be recharged for at least 24 hours. The battery may be damaged if it has been discharged for more than 8 weeks.
- Avoid total discharge since this significantly reduces the performance capacity and service life of the batteries.

- Check the level of the battery fluid regularly (acid batteries); AGM-batteries require no maintenance, but must be continuously recharged.
- Check that the battery clamps are secure and remove any layers of oxide.
- Unclamp the battery circuit breaker if the ancillary battery is not being used for a longer period of time (2 weeks or more). The standby current used continuously by some electrical devices discharges the ancillary battery. Even if the battery circuit breaker is interrupted, the battery can still be charged by the battery charger (conservation charging).
- Should the consumer battery be removed, isolate the plus pole (to prevent short circuits when turning on the motor).

Battery charger

- The charger has a maximum charging current of 25 A.
- The charger functions in accordance with IU0U1 charging technology.
- In the case of misuse the guarantee and manufacturer's liability will no longer apply.
- The air vents in the FIAT seat console panel must not be covered up or closed. Ensure that there is sufficient ventilation.

Tank probes

The probe with rods measures the contents of the fresh and waste water tanks.

- To avoid incrustations, particularly in the waste water tank, never let the water in the tanks stand for too long.
- Flush the tanks regularly.

230V automatic circuit breaker with an earth leakage circuit breaker

The 230V automatic circuit breaker supplies and protects the 230V devices.

- To switch off the 230V power supply in the entire system, set the 230V automatic circuit breaker to "0" (OFF).

Fuses

- Only replace defective fuses after the cause of the defect has been remedied by a professional electrician.
- The new fuse must have the same amperage as the old one.

TFT-Controlpanel

The system consists of control electronics, a TFT control panel with a keypad and several 3-key control panels. It enables you to operate the different lamps and several 230 V devices. Furthermore, various kinds of information and measured values are shown on the TFT display.

Functions of the main switch

- Once the system is in operation, press the main switch briefly to turn all of the lights off. All 12V steady electrical devices (e.g. water pump, refrigerator , heating and entrance step) will remain activated. The devices that were previously switched on are stored in the system; pressing on the main switch reactivates them. This also resets the degree to which those lights were dimmed that can be regulated.
- Pressing the main switch for at least four seconds while the system is switched on will turn off not only the presently activated devices, but also the entire 12 V sockets (this also affects the toilet flush and the water pump). The current operating states will not be saved.

Lighting in the seating arrangement

Ceiling Lamp

- Briefly press the key to switch each lamp on and off. Press longer on the key to regulate how brightly you want the lights to shine. The brightness you set will be saved; when the lights are switched on again, the brightness you originally set will also be switched on again. If the system's power supply is interrupted, the wall light will shine full strength the first time you switch it on.

The wall lamps themselves must be switched on before they can be controlled by means of the control panel.


Key Memory

- This key is used to save and recall the state of individual lights. Press briefly on this key to recall the last saved state of all switchable 12 V lights. Press longer on this key to save the lighting state of a lamp. This key is not used to save the state of the 230 V electrical devices (e.g. hot-air heating).

Entrance light (outer tent light)*

- Press this key to switch the entrance light on and off. It is not possible to switch this light on when the motor is running. The light will turn off automatically when the motor is switched on.

The entrance light must be switched off when the van is on the road.

Kitchen light

- Briefly press the key to switch the kitchen lamp on and off.

Lighting atmosphere

- Briefly press the key to switch on the indirect lighting in the living area.

Main menu on the TFT control panel

Fixed header A

Permanently displays:

- date (1)
- time (2)
- inside temperature (3)
- outside temperature (4)

Main display B

The current status and values of the available components can be viewed at predefined places.

Stand-by Mode

- The display dims slightly if no function has been carried out within a period of one minute.
- In the newer update versions, the display switches itself off and is black if no function has been carried out within a period of 10 minutes.

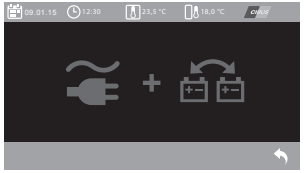
On/Off switch for power supply

If this icon is shown in green, the 12V sockets and the water pump are activated. If the icon is white, the light control has been deactivated. If the main switch is pressed for approx. 4 seconds, the 12V system switches itself off and the icon appears in orange.

230 Volt

Shows that the van is connected to the mains.

Generator used for charging
The motor has been switched on; the ancillary and starter batteries are connected in parallel.



Warning: motor and mains connection
This warning will appear 3 times and must be acknowledged. The warning will not appear again when the defect has been fixed.

Battery management
red = malfunction

Battery being charged

Battery being discharged

Truma heating

red = malfunction, green = in operation

The separate, manufacturer's own control panel for the Truma heating system must be switched on so that the TFT control panel recognizes the device.

Compressor refrigerator
white = switched off
green = switched on
red = malfunction

AUX* Ice-Ex (only in optional extra DuoControl)
If this icon is shown in green, the function being looked at is operating.

Fresh Water Tank
red = empty

Waste water tank
red = full

Electric waste water tank heating*
If this icon is shown in green, the function being looked at is operating.

Air-conditioning system*
green = in operation
red = malfunction

Current mode:

Cooling

Heating

Automatic

Air circulation

HOBBY Connect*
green = in operation; active connection
orange = system is starting up or shutting down

At the time of printing, the descriptions for HOBBY CONNECT had not yet been completed. If necessary, please contact your dealer.

Soft key menu bar C

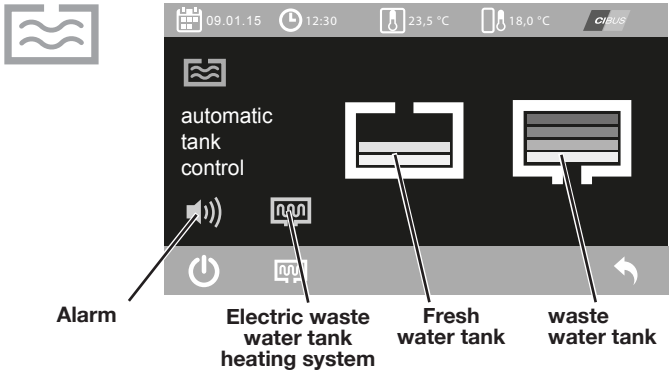
This is used to access the individual menus of the components and settings.

Soft keys

The “soft keys” are used to carry out the commands displayed in the lower menu bar (C). For example, they enable access to submenus, increase or reduce the values shown, or represent the Return button (“Back” function).

Control knob

Like the “soft keys”, the control knob enables easy navigation between the individual menus. Turn the know to select the corresponding menu item or display value shown to the left, or to increase or reduce values. Press the knob to jump to submenus or confirm a value that has been changed. Selected functions / icons are displayed in yellow. Values that require changing are highlighted in white.



Fresh and waste water tanks

The filling levels of the fresh and waste water tanks can be read off here. The alarm can be activated (green) above the left soft key (On/Off icon). If the alarm has been activated, a beep will go off when the tank is being filled.If the alarm has been activated, a beep will go off when the fresh water tank is being filled. These beeps will be sent at increasingly shorter intervals while the fresh water tank is filling up. The filling level of both tanks will be automatically updated on the control panel every few seconds.

Exit this menu by using the “Back” function; otherwise, after one hour, it will automatically switch back to the main menu on the control panel.

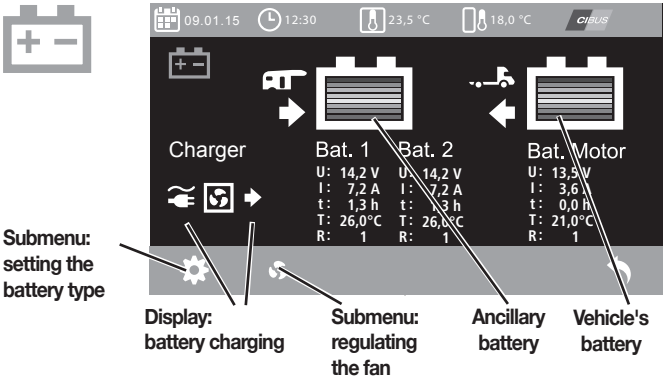
Electric waste water tank heating system

As an option, your van can be fitted with an electric waste water tank heating system. The heating function is activated and deactivated by means of the soft key.

This icon is displayed in green in the submenu when the function is activated. The heating system will then begin to operate automatically when:

- the temperature outside drops below 5° C,
- and either the 230V mains connection has been hooked up or the motor has been started.

The icon on the start display will only turn green when the factors listed above apply and the heating system has begun to operate.



Battery management

The current status of the batteries is displayed in the battery menu:

- Bat. 1 = ancillary battery
- Bat. Mot. = vehicle's battery (starter battery)
- Bat. 2 = additional battery* (displayed only if the mobile home has been equipped with an additional battery)

The charging status is shown in the battery icon; the example shows a fully charged battery.

U = current charging voltage
I = current charging/discharge current
t = remaining time to charge/operate the battery in hours
T = battery temperature
R = calibration check of the battery sensor

The temperature of the battery must not exceed 50° C. A warning message will be sent if the temperature exceeds 50° C and the battery will be shown in red in the main menu on the control panel. If the battery is overheated, it cannot be charged. Should this warning occur repeatedly, the camper must be taken to an authorised specialist.

If the icons for the “Charger” appear, the van is connected to a 230V mains connection and the charge controller was recognised: the battery will be charged. Furthermore, the vehicle must not be started while the sensor for the starter battery is being calibrated.

The value “R” shows the calibration check. If “1” is output, the sensor will be calibrated (target state). If “0” is output, the measured values may deviate slightly and the sensor should be recalibrated.

Normally, calibration is carried out automatically, whereby neither the charging nor the discharge current may be more than 150mA.

Manually calibrating the sensor

The system can be calibrated manually if no electrical devices have been switched on in 12V operation. Opening the battery circuit breaker switches off the electronics in the superstructure (see item: battery circuit breaker). Now the sensor can calibrate itself. This process takes approx. three hours. If the battery circuit breaker is then switched on again, a value of “1” should be shown on the display.

During calibration, the vehicle must not be hooked up to the 230V mains (the charger must not charge the battery during calibration). Furthermore, the vehicle must not be started while the sensor for the starter battery is being calibrated.

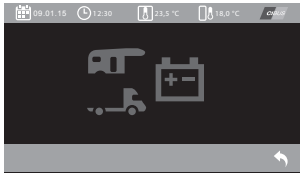
Charger (charging the battery)

Battery is charged when the charger is connected to the 230V mains. The integrated fan is activated.

Battery is charged when the charger is connected to the 230V mains. The integrated fan is deactivated.

Battery is charged via the generator. Motor has been started. Battery charger is not activated.

Error messages



Warning message: undervoltage

This warning appears when a voltage of 10.8V or less is measured for a battery for a duration of at least 3 minutes.

The icon for the battery, ancillary or starter battery in question appears in the menu.

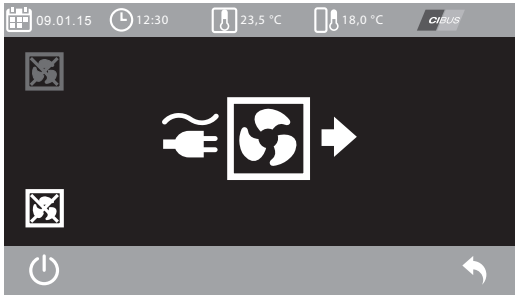
The message can be acknowledged; the battery should be charged immediately.

Warning message: age of battery (SoH = State of Health)

This warning appears when the original capacity of a battery drops to a value of less than 50%.

To enable this message to appear, the battery sensors must be calibrated.

The message can be acknowledged; the battery in question should be replaced.

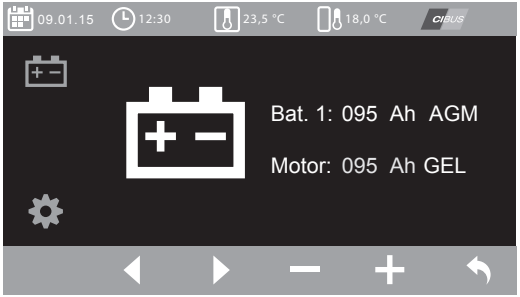


Regulating the fan

The fan is always activated if the charger is used to charge the battery. The fan's performance can be reduced by means of the On/Off function.

When reduced, the icon is shown in green.

If the fan is operated with reduced performance, the charger's performance is also reduced to prevent it from overheating.



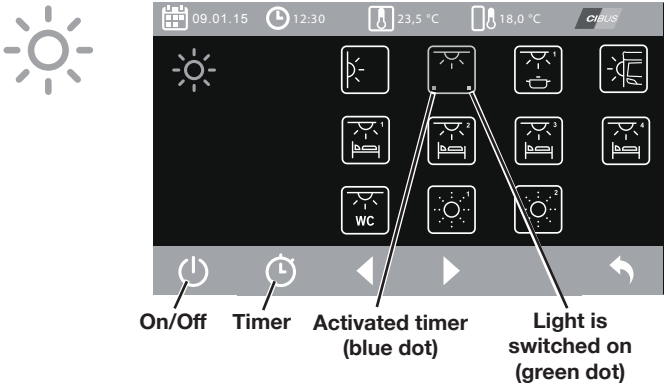
Setting the battery type

The type and capacity of the batteries have been set by the manufacturer. These settings must be changed when the type of battery is changed.

Use the arrow keys or the control knob to select the desired value. Increase or decrease it by means of the +/- functions. If the control knob is used to change a value, the new value must be confirmed by pressing on the control knob.

If the set values do not match those of the battery that was installed, incorrect values will be displayed in the battery management. Setting the type of battery has an effect on the charging behaviour; therefore, this must be set correctly.

Exit this menu by using the “Back” function; otherwise, after one minute, it will automatically switch back to the main menu on the control panel.



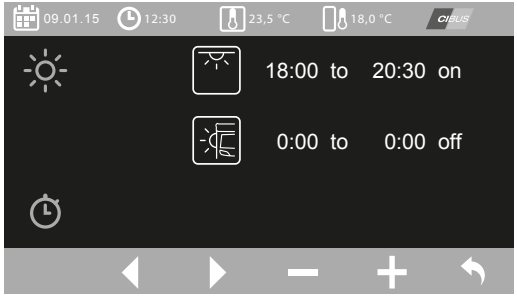
Lighting system

Select the desired light in the menu for the lighting system by means of the control knob or the arrow functions (display: yellow). Press on the control knob or the left soft key to switch the corresponding light on or off (activated lights are displayed in green).

The lights for the bed 3 and bed 4 have not been assigned.

Access the submenu for programming the timer by means of the timer function. Only the ceiling light (top row) and the outer tent light (bottom row) can be regulated using the timer. Activate or deactivate the “Off” function as appropriate.

small blue dot = timer activated
small green dot = output on lighting control activated



Programming the timer

Trigger the desired value by means of the arrow keys or the control knob and press the “On/Off” function or the control knob to select it. Turn the control knob or use the “+/-” functions to set the time. Press the control knob again or use the “On/Off” function to confirm the set time.

Activating/deactivating the timer

The timer will only be activated if the function to the right is changed from “Off” to “On” (the way to do this is identical to programming the timer).

Deactivate the timer by setting the function from “On” back to “Off”.

The activated timer is indicated in the main menu for the lighting system by a blue dot in the corresponding light icon.

Exit this menu by using the “Back” function; otherwise, after one minute, it will automatically switch back to the main menu on the control panel.

Menu for heating system

The Truma Combi heating system is part of the van's standard equipment. As an optional extra, this can be replaced by a Truma Combi e-heating system (can be operated electrically).

The functions on the TFT control panel are practically identical for both options. The standard Combi heating system is described below. Differences between this and the Combi e-heating system are indicated.

The TFT control panel can only be used to control the basic functions of the heating system. To use enhanced functions, the system must be controlled by the separate, manufacturer's own control panel.

Green icons indicate the functions that are operating.

The desired room temperature (in ° C), short-term increase in the amount of hot water for taking a shower (in ° C) and the type of operation (gas/electric*) are displayed in the menu for the Alde hot water heating system. The lower menu icon is shown in green when the heating system is in operation.

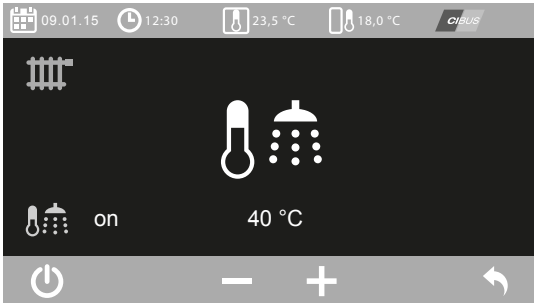
Next to this icon, the value
ON = on or
OFF= heating system is not in operation (white icon) is shown.

The heating system is activated or deactivated using the “On/Off” function in menu bar C.

If the “Off” function is used to switch off the heating, the values that have been set will remain saved. If the “On” function is used to switch the heating back on, the functions last used will automatically reactivate themselves.

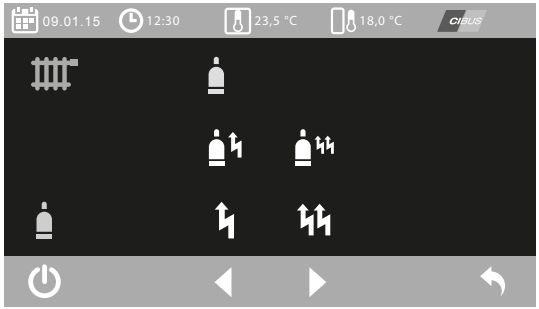
The icons for temperature and performance level as well as the info icon shown in menu bar C lead to further submenus by means of the soft keys or setting the control knob to a selection.

Setting the desired room temperature
In steps of 1° C from +5° C to +30° C



Short-term increase in the amount of hot water
Temporarily increases the hot water temperature from 40° C to 60° C if there is an increase in hot water consumption.

To change the values, use the control knob to select a value (press on the knob to highlight the value in yellow, enabling it to be changed). Use the “+/-” icons or turn the control knob to select the desired value. Press the control knob to confirm the changed value. Use the “On/Off” function to switch the hot-water heater on and off.



The menu shown above can only be selected for the Truma Combi e-heating system:

Type of operation

Gas, mixed operation (gas+electric) or electric can be selected. If mixed operation or electric operation have been selected, the desired performance must also be selected.
Truma: 1 lightning bolt = 0,9kW, 2 lightning bolts = 1,8kW

Use the arrow (menu bar C) or turn the control knob to select the desired type of operation (highlighted in yellow). Then use the “On/Off” function or turn the control knob to activate your selection.

Please refer also to the description of the heating system in Chapter 10.

Info menu
Information on the device manufacturer is shown here.

The submenus shift to the main menu by means of the “Back” function. The main menu shifts to the main menu on the control panel by means of the “Back” function. After one minute, all menus automatically shift to the main menu on the control panel.

Compressor refrigerator

The main menu of the refrigerator shows the current type of operation and the temperature that has been set. The lower menu icon is shown in green when the refrigerator has been switched on.

Next to this icon, the value
On = on or
Off = refrigerator is not in operation (white icon) is shown.

The refrigerator is activated or deactivated using the “On/Off” function on menu bar C.

The icons shown on menu bar C lead to further submenus by means of the soft keys or setting the control knob to a selection.

Menu bar C

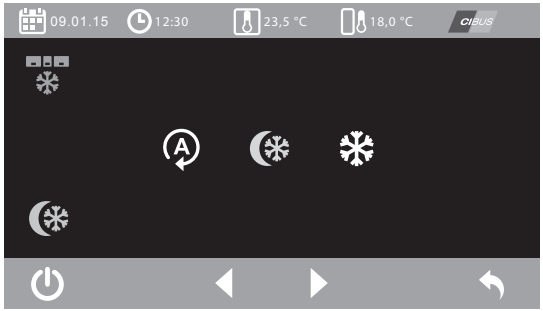
Operation On / Off

Selecting the type of operation

Setting the temperature

Information page

Back



Display

- **Automatic**
- **Night mode**
- **Super cool**

Menu bar C

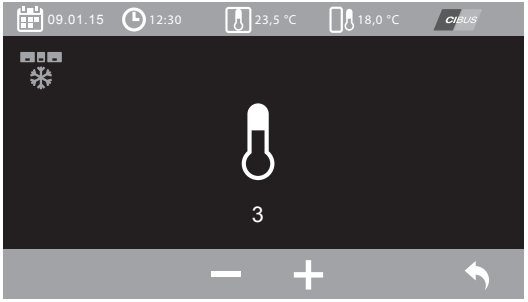
- **Operation ON / OFF**
- **Selecting the type of operation**
- **Back**

Selecting the type of operation

Use the arrow keys above the softkeys or turn the control knob to select the type of operation desired.

The selected type of operation will be highlighted in yellow and must be confirmed by pressing on the control knob.

The current type of operation is shown on the bottom left of the display and can be switched on and off by means of the “On/Off” function. The function that has been switched on will be highlighted in green.



Refrigerator temperature level

Display

Set temperature level

Adjustable temperature levels 1 - 5

Menu bar C

Setting the temperature level

Back

Info menu

Information on the device manufacturer is shown here.

The submenus shift to the main menu by means of the “Back” function. The main menu shifts to the main menu on the control panel by means of the “Back” function. After one minute, all menus automatically shift to the main menu on the control panel.

DOMETIC* air-conditioning system

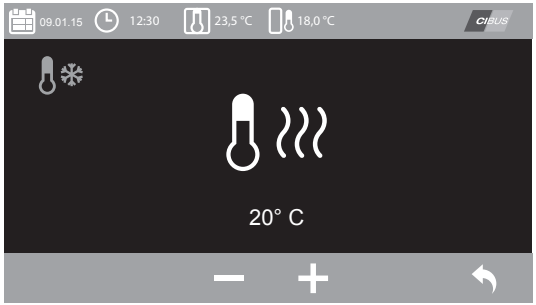
The set type of operation, fan level and desired room temperature are displayed in the menu for the Dometic air-conditioning system. The lower menu icon is shown in green when the air-conditioning system is in operation.

Above, the value
ON = on or
OFF = air-conditioning system is not in operation (white icon) is shown.

Submenu: Selecting the type of operation

- **cooling**
- **heating**
- **automatic mode**
- **air circulation mode**

The type of operation can be changed using the “+/-” soft keys on menu bar C or by turning the control knob. The new type of operation must be confirmed by pressing the control knob or by means of the “On/Off” soft key.



Setting the temperature

The desired temperature can be set here. This is not possible in air circulation mode, because neither the cooling nor the heating function are then active.

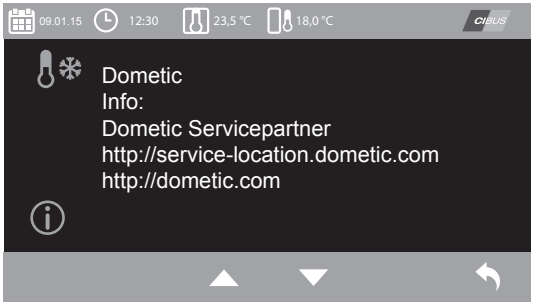
Setting the fan level

Set the desired fan level here (levels 1-3 and maximum ventilation). When in automatic mode, the ventilation will also be regulated automatically, i.e. it is then not possible to enter a separate setting.

The fan level can only be selected manually for “Cooling” and “Air circulation”. For all other types of operation, the roof air conditioning system controls the fan automatically.

The values can be changed using the “+/-” soft keys on menu bar C or by turning the control knob. The new value is automatically applied after exiting from the submenu.

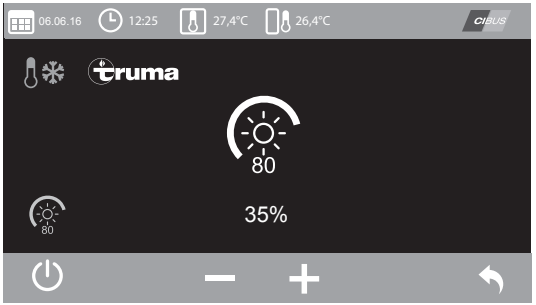
Please also observe the descriptions in **10.6 Rooftop Air Conditioning.**



Info menu
Information on the device manufacturer is shown here.

The submenus shift to the main menu by means of the “Back” function. The main menu shifts to the main menu on the control panel by means of the “Back” function. After one minute, all menus automatically shift to the main menu on the control panel.

The aforementioned functions are only available for air conditioning systems that are CI bus compatible.



TRUMA* air-conditioning system

If a TRUMA air-conditioning system is subsequently fitted, it is also possible to select the submenu for regulating the lighting.

Increasing or reducing the value by means of the “+/-” function or the control knob changes the intensity of the lighting integrated in the air-conditioning system. Press the control knob or use the
“On/Off” function (left soft key) to confirm the new value.

Exit this menu by using the “Back” function; otherwise, after one minute, it will automatically switch back to the main menu on the control panel.

Radio

Use the “On/Off” function to switch the radio on and off. If the radio is on, the icon is shown in green.

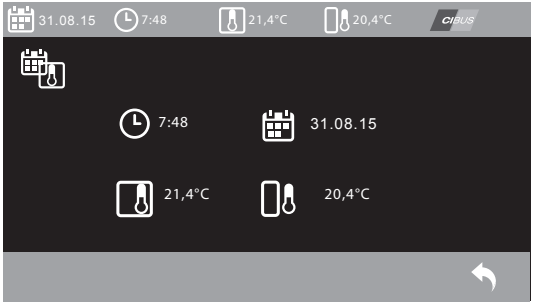
Exit this menu by using the “Back” function; otherwise, after one minute, it will automatically switch back to the main menu on the control panel.

AUX (function in DuoControl incl. Ice-Ex*)

AUX is an external relay output that switches the Ice-Ex cartridge in the gas bottle container on and off.

The Ice-Ex cartridge must always be switched on manually using the TFT control panel.

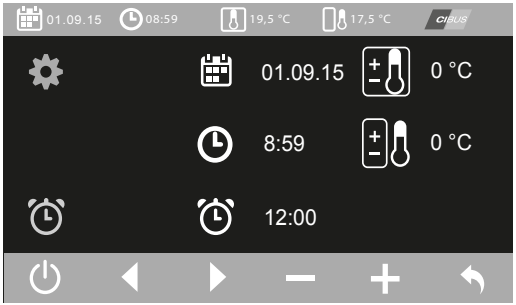
If the van has been equipped with a remote indicator for DuoControl, the Ice-Ex cartridge can only be switched on and off via the remote control. It does not appear on the TFT control panel.



Displaying the data in the fixed header A

This menu gives an overview of the data in the fixed header A. It is only possible to exit this menu by using the “Back” function; it does not automatically switch back to the main menu on the control panel.

- **date**
- **time**
- **inside temperature**
- **outside temperature**



Settings menu (for data in the fixed header A)
The date and time can be set in the Settings menu. Use the control knob or the left and right arrows to reach the desired value. Press the control knob; it is then possible to change the values by turning the knob (right = increase value; left = decrease value) or by using the “+/-” function. Press the control knob to confirm the changed value. Only then will it be saved.

The wake-up time is set and confirmed in the same way. Use the “On/Off” function to activate the alarm clock. The activated alarm clock is shown in green.

It is also possible to calibrate the indoor and outdoor temperatures shown, as temperature effects on the sensors may lead to a deviation between the temperature displayed and the actual temperature.

The temperature display can be changed by a maximum of +/- 12° C.

Exit this menu by using the “Back” function; otherwise, after one minute, it will automatically switch back to the main menu on the control panel.

Info menu on the TFT control panel
Information on the device manufacturer is shown here.

Circuit board (reverse side) of TFT display

General information regarding the TFT display

The time and date are buffered by a 3V 210 mAh, CR2032 type button cell. If, therefore, the time should be incorrect or the clock should stop working, this button cell must be replaced.

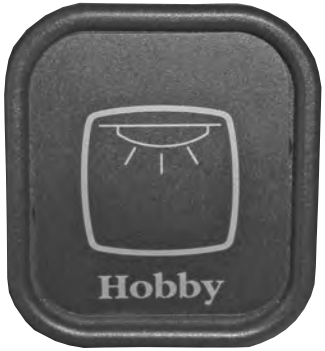
It is mounted on the reverse of the circuit board ① of the LCD display. To replace this button cell, the LCD display must be removed from the furniture front by carefully clipping the chrome-plated frame out of its holder. You will then see the screws that fasten the plastic part to the furniture. Loosen these screws to detach the display.

When replacing the button cell, please ensure that plus and minus are in the right direction. Incorrect polarity may cause the display to become defect.

Remote control(s), bed

- Briefly press the key on each remote control by the bed to switch on the left light ①, right light ③. The key ② switches the ambient lighting* in the sleeping area on and off. Press longer on the key to regulate how brightly you want the lights to shine. The brightness you set will be saved; when the lights are switched on again, the brightness you originally set will also be switched on again.

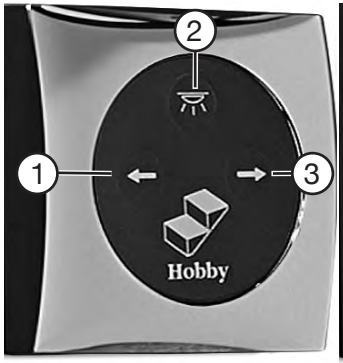
The triangular lights are standard equipment. They have separate switches on the lights that must be activated if you wish to use the remote control to switch them on and off. This key ② is only available if the vehicle has been fitted with the light package.



Washroom switch

Remote control, washroom (Compact bathrooms and bathrooms on the side)

- Briefly press the key to switch on the light in the washroom.



Switch for step tread and children's light switch for ceiling light

Remote control(s), entrance

These remote control functions work even if the functions of the main switch have been deactivated on the TFT control panel. The remote control controls the electric entrance step.

- Press the key ① to fold the step out; press it ③ again to fold the step back in.
- Briefly press the key ② to switch on the entrance light/outer tent light).
- Briefly press the key ④ to switch on the ceiling light.

Kitchen and ceiling lighting

Lighting in washroom

Remote control for kitchen

- Briefly press on the right switch to switch on the washroom light (**for bathroom models**).
- Briefly press the right key on the double switch to switch on the kitchen light.
- Briefly press the left key on the double switch to switch on the ceiling light.

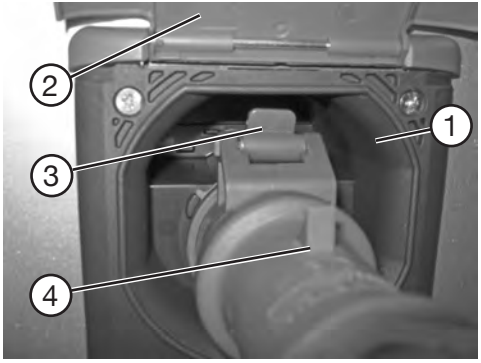
7.3 Electric power supply

In all of the vehicles, the central electrical system is installed **underneath the passenger seat.**

CEE-External socket

Electricity for the van can be obtained from the following connections:
- 230V mains connection 50 Hz
- via the generator when the motor is running
- via the ancillary battery

Everything that uses 12 V, such as lighting, water supply, etc., is available.



Connected 230V feeder plug

Supply via mains connection

The van is connected to the external 230V mains by means of the CEE external socket ① located in the side wall.

To connect the CEE feeder plug

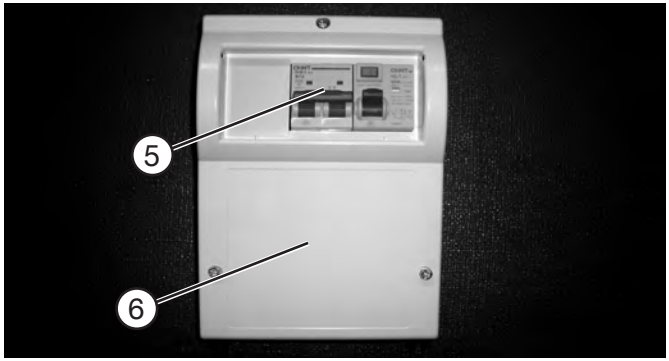
- Switch off the automatic circuit breaker ⑥ by pressing the rocker button ⑤ down.
- Flip up the cover flap of the CEE external socket ② **(see also p. 38).**
- Completely unwind the connector cable.
- Open the cap of the CEE feeder plug ③ by pulling it up in a 90° angle
- Insert the plug ④ until it locks into place.
- Switch the automatic circuit breaker ⑥ back on.

The van's engine must be turned off before the 230V mains connection is hooked up.

To disconnect the electric connection:

- Switch off the automatic circuit breaker ⑥ by pressing the rocker switch down ⑤.
- Remove the CEE feeder plug ④ .
- Press the cover flap ② of the external socket **(see also p. 38)** down until it clicks into place.

Only plugs and cords that comply with CEE standards may be used.



Automatic circuit breaker with FI ('fast interrupt') switch

Fuse protection for the 230V system

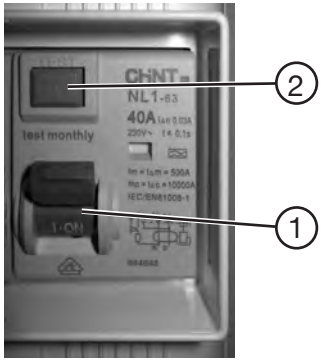
The 230V system is protected by a two-pole 13 A automatic circuit breaker ⑥, which is located in the seat chest in the seating arrangement. It can be accessed via the side compartment.

Rules for the mains connection

- Use only a 3 x 2.5 mm² cable with a maximum length of 25 m, a CEE plug and connector to connect the van to an external 230 V mains.
- After the mains connection has been plugged in, both the modular and the vehicle battery will automatically be charged by the battery charger in the van (even if the Control Panel has not been switched on).

> ⚠ When obtaining electricity via a cable drum, this **must** be completely unwound, as otherwise induction may cause the cable to heat up, which could lead to burning. (Provided there is no protection against overheating)

- The 230 V mains connection in the van has been designed for a total power consumption of 3000 W. If additional devices requiring electricity are connected, such as a water heater, etc., you must ensure that this electric power value is not exceeded, taking other electrical equipment in use, such as the refrigerator, heating, etc., into account.



FI switch and test button

Residual current device

The standard version of your vehicle is equipped with a residual current device that will interrupt the electric circuit in case of a possible residual current. Should there be a malfunction, the passenger circuit breaker opens the entire 230 V circuit.

> ⚠ Repairs must not be carried out on the residual current device.
>
> A residual current device does not guarantee any protection against the danger from an electric shock. It does not protect against possible electrical accidents.

The tripping time for the residual current device (RCD) with a residual current of 30 mA is less than 0.1 seconds.

After putting the electric system into operation, the function of the residual current device must be checked. After voltage has been applied to the switch ① and it is on (set to I-ON) it must set off when you press the test button ②.

The rocker switch ⑤ **(p. 95)** jumps down; after it has successfully been checked it must be switched back up to the "On" setting.

This check should be carried out at least once a month to ensure that the residual current device functions perfectly in case there should be a fault in the current.

When the residual current device has been set off (even when testing) the customised settings in all mains-operated devices are lost and the default settings made by the manufacturer will apply again.

f the automatic circuit breaker has gone off (other than if you have switched it) you must wait a short while before switching it on again.

- If the automatic circuit breaker remains active, there was only an overload.
- If the automatic circuit breaker goes off abruptly again, there is either a short circuit or an earth fault.

Devices that set off during operation show that there is a defect; they must be checked and/or repaired by an electrical engineering specialist.

Switching it back on again and again will do no good. The automatic circuit breaker also goes off when the rocker switch is held firmly in place.

Operation when the motor is running

As soon as the motor is running, a relay connects the starter battery and the van battery in parallel. Therefore, the dynamo charges both batteries. If the vehicle engine is issued, both batteries are disconnected from each other again. In this way, the starter battery cannot be discharged by equipment in the van.

Always turn the motor off before hooking up the 230V mains connection via the CEE external socket.

The 12 V supply for the refrigerator only functions when you are driving. If the motor has stopped, the 12 V operation of the refrigerator is automatically turned off again.

To optimally charge a discharged modular battery while driving, as many 12V electrical devices as possible should be switched off.

Checklist

- Turn off the motor.
- Switch on the 12 V master switch.
- Turn off all equipment that uses 12 V.
- Start the motor.

The voltage of the van battery must rise if

- the engine speed is above the idling speed,
- the vehicle‘s battery is not completely discharged.

The control panel shows whether or not the generator has been charged. If this is not the case, please check the following:

- Is the 50A fuse in the supply line to the ancillary battery near the motor battery functioning properly?
- Is the “Motor running” signal on the input module on?

Operation via ancillary battery

- Only accumulator batteries with bound electrolytes (gel batteries) may be installed in those positions specified by the manufacturer.
- The installed gel battery may not be opened.
- When changing ancillary batteries, use only batteries of the same make and capacity. (Setting the battery type on the control panel: see **p. 76**)
- Before disconnecting or connecting the auxiliary battery, switch off the motor, 230V supply, 12V supply as well as all electrical devices.
- Before replacing fuses you must first de-energise the charger.
- Before replacing a blown fuse you must first fix whatever caused the fuse to blow.
- Fuses may only be replaced by fuses with the same fuse protection value.
- Airing the charger insufficiently will reduce the charge current.
- The surface of the charger casing may become hot when the device is in operation.

Vehicle's electric system underneath the passenger seat

Position of the 95 Ah AGM ancillary battery

The ancillary battery is mounted in the front passenger console. The foot of the battery is attached to a base plate. The passenger seat including the rotating assembly must be dismantled in order to subsequently fit or change the batteries.

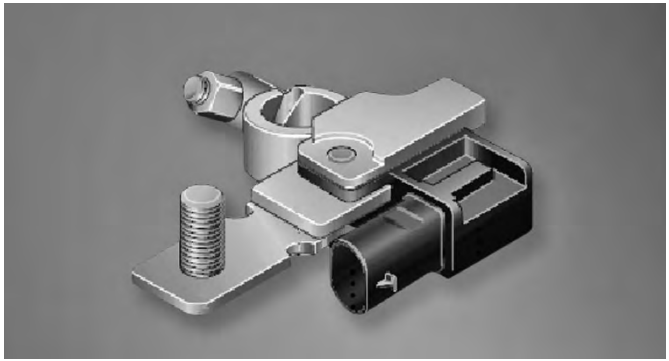
In all vehicles, the optional additional battery is mounted on a base plate in the driver's console.

Operating and charging the ancillary battery

If the van is not connected to the 230V mains supply, the ancillary battery will supply the electrical system with 12V DC voltage. Since the battery only has a limited capacity, the electrical devices should not be operated for a longer period of time without charging the battery or connecting the camper to the 230 V mains connection. Some electrical devices continuously use standby current from the ancillary battery. This discharges the ancillary battery.

Die Ladung der Aufbaubatterie erfolgt über folgende Stromquellen:

- the generator when the motor is running
- the CA 360 charger
 (only via 230 V power feed)
- if available, via a solar panel*



Intelligent Battery Sensor (IBS)

Battery Sensor

An Intelligent Battery Sensor (IBS) has been connected to the battery terminal. It monitors the actual current and the actual voltage in a highly precise manner.

It is possible to precisely predetermine the operating time of the battery based on the actual consumption. The IBS ensures that the battery will be changed in good time and assists in providing active energy management so that the performance requirements of the different electrical devices can be coordinated with the charging of the battery.

The charge state of the battery, age or remaining time until discharge are all shown on the TFT display of the control panel. Charging is carried out gently in accordance with the steady-state principle by an "intelligent" charger.

The battery sensor is protected by a 10 A .

- Always charge the ancillary battery for at least 10 hours before each journey, directly after each journey and before you take the motor home temporarily out of service.
  - Before each journey, please check that the battery is charged (**see p. 73**). If necessary, connect it to the mains to start charging the battery.
  - The battery is only charged if it has a minimum voltage of 8 V.
  - Use every opportunity during your journey to charge the battery.
- If the vehicle is not in use for a longer period of time, the battery should be disconnected after it has been optimally charged by switching the battery circuit breaker on.
- The battery loses its capacity after having been used for a while and at low temperatures.
  - A warning will go off if the battery ages to a value less than 50% of its nominal capacity.
  - If the battery voltage should be less than 10.0V, all devices will automatically be switched off (exception: 12V (TV) sockets and antenna wiring).

Battery circuit breaker

Position of the battery circuit breaker

The battery circuit breaker is located directly by the passenger seat.

A circuit breaker has been installed to protect the modular battery from being exhaustively discharged when the van is not being used. When the switch is opened, the modular battery is completed disconnected from the 12 V mains. **"Off" position = disconnected from 12V mains.**

The battery charger is directly connected to the ancillary battery so that the ancillary and starter batteries can be charged even if the battery circuit breaker is switched on.

The battery sensor* continues to be activated even if the battery circuit breaker has been opened.

To keep the batteries charged even when not in use, it is mandatory that the vehicle be connected to a 230V mains connection every 6 weeks. Recharging should be carried out for at least 24 hours.

The battery circuit breaker must be **on** when using the vehicle home and whilst driving.
When the circuit breaker is open, the electrical input stage will **not** engage automatically.

If the battery circuit breaker has been switched on for a longer period of time, you may lose your customised radio and/or sat nav device settings. These settings must then be entered again.

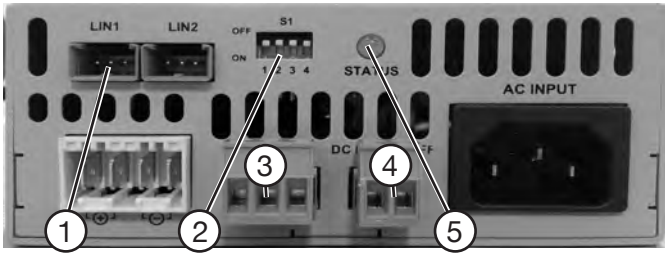
Battery charger

Charger CA-360, 25 A power charging module

The charger supplies the batteries with electric power when there is bus-powered mains operation.
As they heat up, the charger reduces its power output to ensure that there is no chance of overheating.

The charging device can be accessed from the back of the passenger seat.

The fan on the battery charger can be regulated manually. Please refer to the descriptions for the battery menu on the TFT control panel.



Charger connections

① Socket; the middle pin is the sensor.
② PCB switches. The switches must all be in the top position, i.e. all set to “off”.
③ Changeover contact, for free disposal.
④ Contact bridge, fan on/off.
⑤ LED blinks to show current charging mode.

7.4 Electrical system

When the van is connected to the 230V mains supply, the battery is automatically charged by the charger.
All 12V electrical devices are supplied directly by the ancillary battery.

All of the lamps in the van use 12V LED lights. Only large electrical devices such as the Combi E heating*, air-conditioning system*, etc., use 230V.

Assignment of fuses

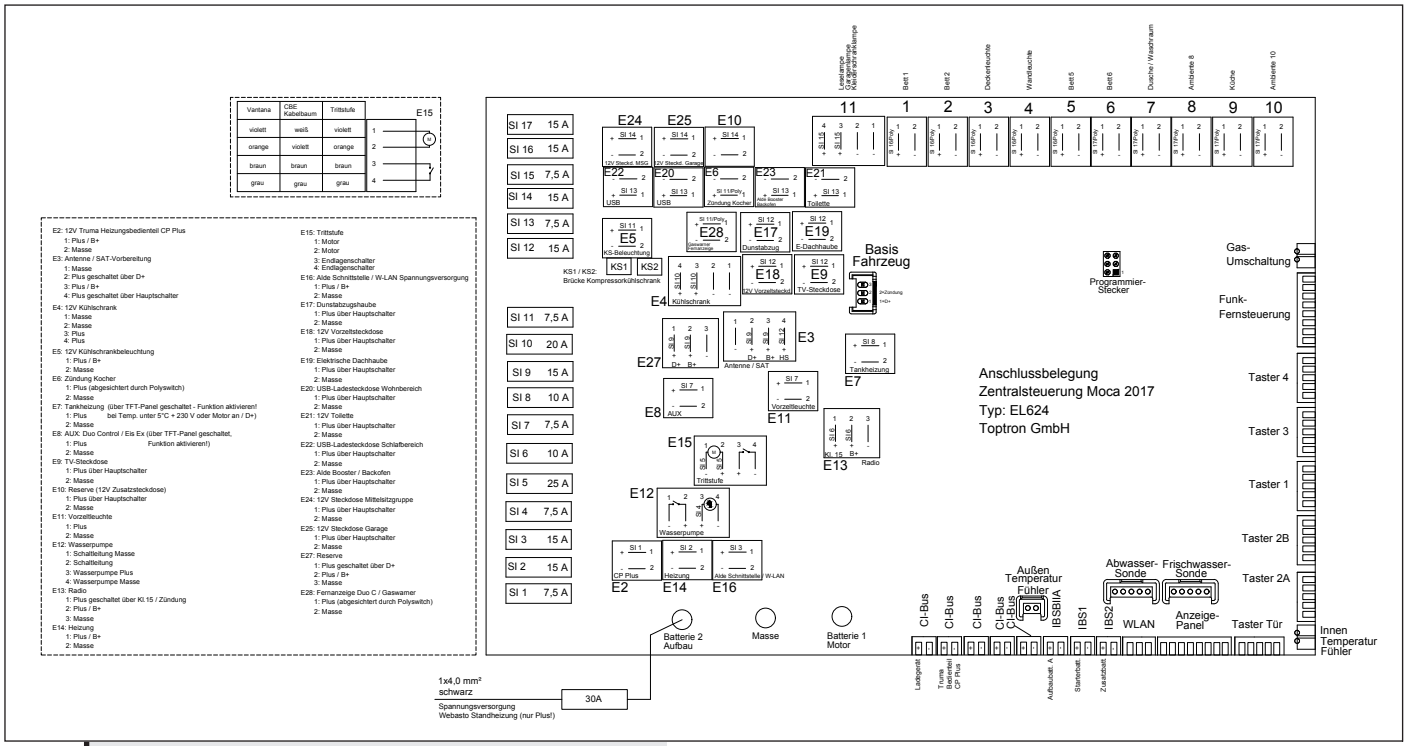
Assignment of fuses

The fuses for the individual internal electric circuits are located in the central control.

In some models, there may be slight deviations in this assignment.

Only replace defect fuses if you know what caused the fuse to blow and have fixed this.

Assignment of connections for central control EL 624



Model-specific variations may occur.

USB surface-mounted socket

USB charging socket*

Depending on the model and position, the USB connection has been fitted as a surface-mounted or flush socket. The connection to the USB surface-mounted socket can be accessed from below. This connection is suitable only for charging USB-compatible devices.

The 5V USB connection is supplied with power from the 12V electric system.

TV connections

7.5 TV Connections

TV unit

The installation area for the flat-screen TV is located above the seating arrangement on the partition to the bathroom.

The required connections can be found right next to this space.

The corresponding connection for the SAT antenna (E3) is positioned behind the furniture surround, which is located in the right wall cabinet next to the TV connections.

The power cable (E3) has already been connected by the manufacturer to the control panel.

Cable colours (E3):
black = mass
red = steady plus for ancillary battery
grey = D+ signal
orange = plus from ancillary battery via main switch on TFT control panel
80 (reserve cable, not attached): Preparation for a CI BUS connection

External socket and antenna terminal in the outer tent

230V external socket incl. satellite/TV connection*

As an option, your van also has a combined external socket with a SAT/TV connection in the outer tent. This can be used, for example, to set up a TV in the outer tent. Depending on how you wire it, the integrated antenna terminal can be used as either an input or an output socket. For further information, please speak to your Hobby dealer

Clothes cupboard light

Reading light on the B-pillar

7.6 Special Lights

The switches for the lights described here are located directly on the lights themselves; they are not controlled via the control panel.

The main switch on the TFT control panel must be activated.

Fig. 1

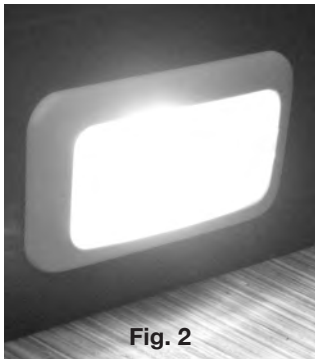


Fig. 2

Entrance light

The entrance area by the sliding door has been fitted with a light that cannot be operated using the control panel or one of the remote controls.

Toggle the light in the frame:

- to the right = off **(see Fig. 1)**
- centre = light permanently on **(see Fig. 2)**
- to the left = light switches on automatically when sliding door is opened.

The light will switch itself off automatically when the sliding door stays open for a longer period of time.

SAT-nav device

7.7 Mobile navigation *

As an optional feature, your van can be equipped with a mobile navigation system and integrated rear view camera.

- Read the device manufacturer‘s operating instructions carefully before initial operation.

- Do not allow yourself to be distracted by this device as this may cause accidents.
- Never operate the device while driving.
- Check the display panel only when the traffic situation is safe for doing so.

Reverse drive video system *

As part of all vans' standard equipment, they have been prepared for connection to a reverse drive video system:
The front connection of the built-in video cable is located in all vehicles underneath the upper right-hand compartment in the dashboard, which can be accessed after dismantling the inner shell.

Vantana
The rear cable end can be accessed from the outside of the vehicle by unscrewing the third brake light.

The following cable has been installed:

Model	Manufacturer	Part description	Part number
Vantana	Waeco	camera cable RV-610	9103555988 10m

7.8 Subsequently installed devices

Subsequently installed electronic devices that can be used while driving (e.g. mobile phones, wireless equipment, radios, cameras for driving in reverse, navigation equipment, or others) must meet all of the requirements for electromagnetic compatibility. Such equipment must have been approved in accordance with ECE 10, because otherwise it may cause interference with the electronic systems already installed in the van.

A CE mark is mandatory for devices that have been subsequently installed and which cannot be used while driving.

Chapter 8: Water

8.1 General information

We recommend that you inspect any water you have left in the tank, this is very critical before using the water again.

- Always use water that is of drinkable quality when working with food. This also applies for washing your hands or objects that come into contact with food.
- In order to ensure excellent water quality, water should be taken directly from the public drinking water system.
- Garden hoses, watering cans and similar materials unsuitable for drinking water should never be used to fill the mobile system.
- If the van has not been used for a longer period of time, the entire water system must be emptied completely.
- After longer periods of stagnation, the water system must be flushed thoroughly before being used. Should you discover impurities, the material should be disinfected using suitable agents that have been approved for such measures.

Immersion pump

8.2 Water supply

Function of the water supply

Fresh water is supplied to the hot-air heating system, the kitchen and toilette via a submersible pump. The TANDEM submersible pump operates electrically:

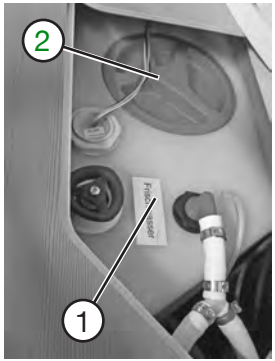
- via the ancillary battery,
- when the van is connected to the 230V mains via the power supply.

The following applies for the TANDEM submersible pump:

- The TANDEM submersible pump is only suitable for water.
- The TANDEM submersible pump can briefly tolerate temperatures of up to 60° C.
- Avoid dry runs.
- Protect the pump from freezing.
- Hard blows or hits as well as very dirty water can destroy the pump.

The TANDEM submersible pump requires no maintenance.

The TANDEM submersible pump switches itself on automatically when the water taps are opened.



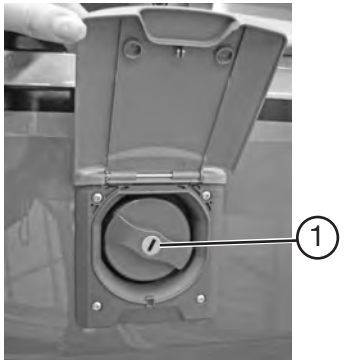
Fresh water tank

Fresh water tank

The tank ① has a volume of 95 l and is located in the seating arrangement.

The tank is filled with fresh water by means of the filler neck on the side wall.

The neck for filling up fresh water is marked by a blue cap and a picture of a water tap on the upper edge of the frame. The screw cap is opened and closed by means of the enclosed key for exterior flap locks and the door of the structure. If you fill too much water into the tank, the excess will run out at the filler neck.



Filler neck for the fresh water tank

Opening

- Use key to unlock ①.
- Give the blue cap a strong turn counter-clockwise and remove it.

Closing

- Put the blue cap back on and turn it clockwise to shut it.
- Use key to lock ①.

Check the red service lids ② **S. 117** regularly; they may become loose if the fresh water tank is filled often.

Filling the water system

- Place the van in a horizontal position.
- Shut all of the water taps.
- Switch on the main switch on the control panel.
- Close the outlet valve (FrostControl) on the boiler.
- Unlock the petrol cap and turn it counter-clockwise to open it.
- Fill the water tank using the fresh water filler neck.
- Turn all of the water taps to „hot“ and open them. The water pump will be switched on.
- Leave the water taps open until the water flows out of the taps without any bubbles. This is the only way to ensure that the boiler will also be filled with water.
- Turn all of the taps to „cold“ and leave them open. The cold water pipes will be filled with water.
- Leave the water taps open until the water flows out of the fixtures without any bubbles.
- Shut all of the water taps.
- Shut the filler neck.

Use the control panel to check the amount of water in the fresh water tank.

⚠ Never introduce anti-freeze or other chemicals into the water system.
This can be poisonous!
When operating during winter ensure that the fresh water tank is sufficiently heated.

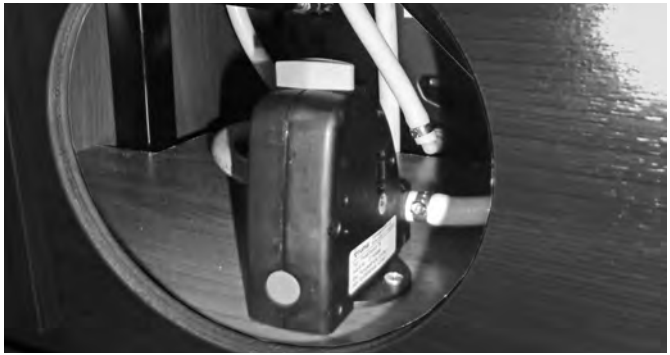
To remove water

- The water will be mixed to the desired temperature according to the position of the pre-mixing unit.

Hot water supply

Hot water is supplied by means of the hot-air heating system with its integrated hot-water boiler **(see also Chapter 10.2.1)**; the options for settings are described on **p. 136 “Changing the hot water temperature”**.

The boiler will automatically empty itself via a safety or outlet valve if there is danger of frost **(see also p. 144 Frost Control).**



Frost Control

Position of the Frost Control valve

The Frost Control valve is located directly on the hot-air heater in the seating bench. It can be accessed via the furniture flap on the side.

Exception: Model K55 F
The hot-air heater and the Frost Control are located underneath the bed, on the left-hand side in the direction of traffic.

The non-electric safety or drain valve will automatically open at temperatures under approx. 3°C and drain the boiler contents via a drain nozzle.

If the cold water system is operated without the boiler the boiler tank will still fill with water. In order to avoid frost damage the boiler must be drained via the drain valve, even when not in use.

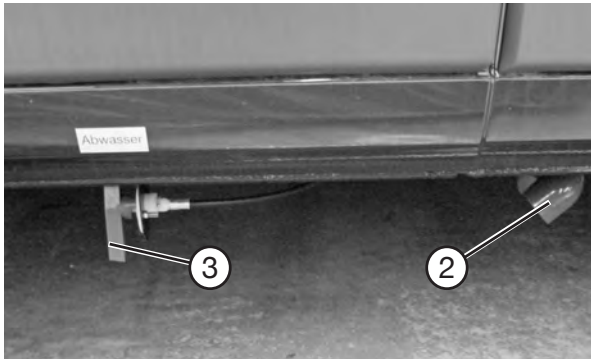
Outlet valve for fresh water tank

Emptying the fresh water tank

The outlet valve is located in the rear behind an opening in the furniture, directly on the fresh water tank.

- To empty the fresh water tank, turn the rotating wheel ① to the left to open.

Always empty the fresh water tank completely if the heating has not been switched on and the van is not in use, and especially if there is frost.



Waste water opening

Emptying the waste water tank

- The waste water opening ② is located on the left side underneath the vehicle.
- Turn the valve ③ to open it and drain off the waste water.
- After all of the waste water has been drained off, shut the valve by turning it.

Emptying the entire water system

- Use the control panel to switch off the electricity for the water pump by pressing the main switch (for approx. 4 seconds).
- Open all of the water taps to the centre setting.
- Hang up the adjustable shower head in the shower.
- Open all of the outlet valves (including the FrostControl).
- Unscrew the cap on the cleaning port of the fresh water tank ②**(page 111).**
- Unscrew the overflow pipe in the fresh water tank.
- Remove the lid of the water tank. Take out the water pump and hold it up until the water pipes have emptied completely.
- Check whether the tank, boiler, faucets and pipes have emptied completely. If necessary, blow out any remaining water in the pipes using compressed air (max. 0.5 bar).
- Re-insert the the water pump in the fresh water tank and close the openings.
- Leave the faucets and the outlet valves open.
- Clean the tanks and rinse them thoroughly.
- Allow the water system to dry for as long as possible.
- Do not forget to empty the toilet cassette.

If the vehicle is not being used and there is a danger of sub-zero temperatures be sure to drain the entire water system. Leave taps turn on in the middle position. Leave all drain valves open.

Only empty your waste water tank at the specially designated disposal points and never in open spaces! As a rule disposal points can be found at motorway service stations; campsites and petrol stations.

Waste water tank

The waste water tank is integrated in the chassis; it is insulated.

Optional

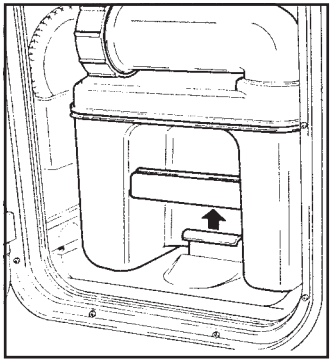
After the electric waste water tank heating system has been switched on on the control panel, the tank is heated by a heating cartridge. This prevents the waste water from freezing in a light frost **(please refer also to the description on p. 72)**.

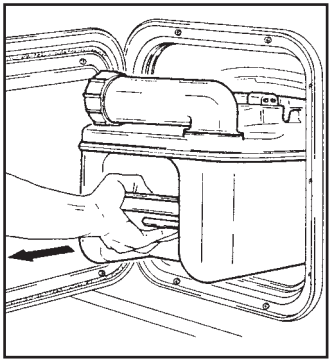
Do a small quantity of antifreeze agent (e.g. table salt) to the waste water tank if temperatures are significantly below freezing to prevent the waste water from freezing.

The waste water tank is not sufficiently protected against damage from frost when the vehicle is not in use. Therefore, if there is any danger of sub-zero temperatures empty the waste water tank completely.

Never pour boiling water down the sink. This can cause distortions and leaks in the waste water system.

Use the control panel to check the amount of water in the waste water tank.





8.3 Toilet

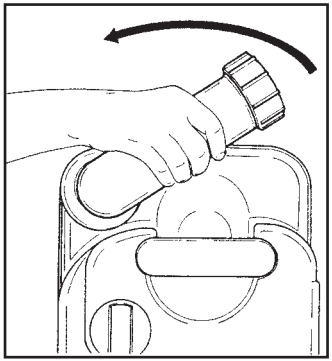
Before you can use the toilet, you must first prepare the waste tank by following the steps below.

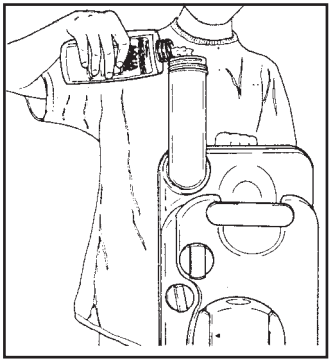
Preparing the waste tank

- Open the Thetford door **(p. 38)** and pull the holding bar up to remove the waste tank.

The waste tank can only be removed when the drain valve is closed.

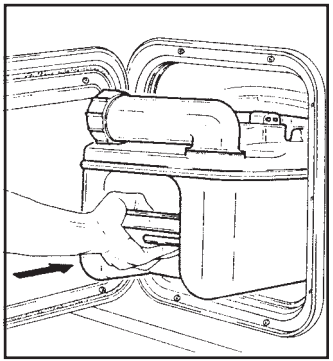
- Pull out the tank as far as possible, keeping it level.
- Slightly tip the waste tank and then pull it out completely.
- Place it in an upright vertical position.
- Turn the drain nozzle to an upward position.

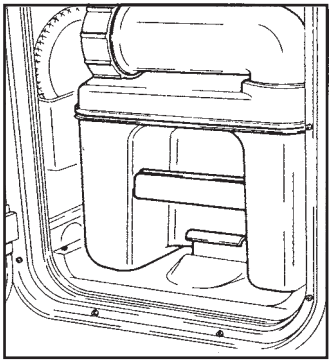




Use toilet fluids very sparingly. An overdose is no guarantee of preventing possible odours!

- Fill the waste tank with the correct amount of toilet fluids.
- Then add enough water to completely cover the bottom of the waste tank.
- Return the drain nozzle to its original position.

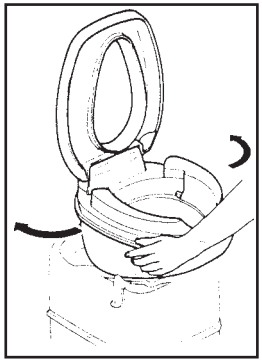


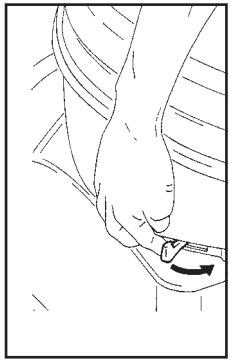


- Push the waste tank back into position.
- Ensure that the holding bar secures the waste tank.
- Close the service flap.

Never add sanitary liquids directly through the valve or into the toilet bowl, because this may damage the washer of the valve in the waste tank.

Always add liquids through the emptying support.





Using the toilet

- Turn the toilet bowl to a comfortable position.
- Fill the toilet bowl with a small amount of water by pressing the flush button ① or by opening the drain valve by pulling the valve handle under the toilet bowl towards you.
- Use the toilet.
- After use open the drain valve (if still closed) and flush. Close the drain valve after flushing.

②Level of the tank LED

Sliding toilet in compact bathroom

Original position

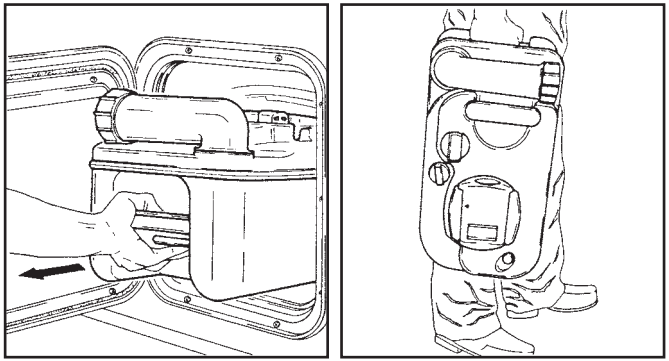
Sliding toilet (model-specific)

In its original position, the toilet is located underneath the projection so as to provide sufficient room to move freely in the washroom.

- To unlock the sliding toilet, pull on the handle ⑤ underneath the wash basin.
- Pull the entire toilet as far as it will go to the right. The toilet can now be used.
- After using the toilet, open the valve ③ and press the flush knob ④ . Then shut the valve ③ .

Handle for locking sliding toilet

Before driving and while showering, the toilet should be pushed back to its original position until it noticeably clicks into place.

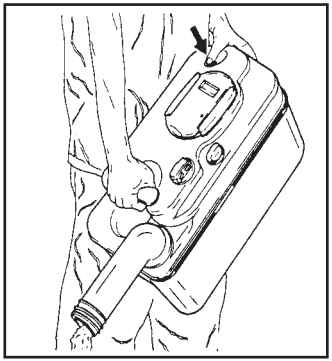


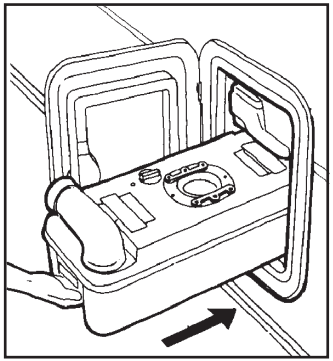
Emptying the waste tank

The waste tank must be emptied no later than when the LED that indicates the level of the tank ② **(page 118)** lights up. It is recommended that the tank is emptied before this. The LED that indicates the level of the tank ② **(page 118)** lights up when the tank holds more than 15 litres. From this point in time the tank has a residual capacity of 2 litres, representing approx. 5 flushes.

- Open the toilet flap and pull the holding bar up to remove the waste tank.

The waste tank can only be removed when the drain valve is closed.





Only empty the waste tank at specially designated disposal points and never in open spaces!

- Take the waste tank to a designated disposal site, making sure to hold the drain nozzle in an upright position.
- Remove the cap on the drain nozzle.
- Tilt the waste tank so that the drain nozzle is pointing downwards.
- Press the vent button with your thumb and hold it down. The waste tank will drain itself.
- Flush the waste tank once with fresh water. Do not forget to screw the cap back on to the emptying support.
- Return the waste tank to its storage position, ensuring that it is pushed in until the holding bar locks into place.
- Lock the service flap.

Chapter 9: Gas

9.1 General safety rules when using LPG fittings

The operating pressure for gas is 30 mbar.

You are not permitted to operate the heating system while driving!
Exception:
As an optional feature, the vehicle can be equipped with a gas pressure regulator for use while driving (e.g. ControlCS).

Checking the gas fittings

- Before initial operation have the LPG fittings checked by an expert.
- The gas fittings must be checked every 2 years by an LPG expert. This must be confirmed on the certificate (in accordance with Form G 607 from the German Association of Gas and Water Experts (DVGW) and EN 1949).
- Regulator knobs, hoses and exhaust pipes must also be checked.
- The safety regulators and hose lines must be replaced at least every 10 years; high-pressure hoses after 5 years (from the date they were manufactured. Should you discover tears, porous spots or similar defects in the hose, it must be replaced immediately.
- The operator is responsible for having checks carried out. This also applies for vehicles that have not been approved for driving on the road.

If you suspect that gas is leaking, take the following measures immediately:
- Close the stop valve on the gas cylinder.
- Ignition sources such as open flames or smoking are strictly forbidden.
- Air the rooms.
- Clear the danger zone.
- Inform your immediate surroundings (groundsman) and, if necessary, the fire brigade.

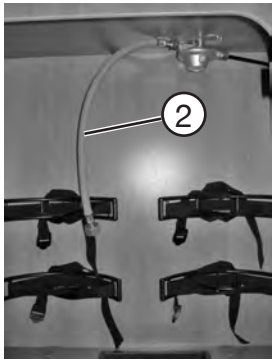
The gas fittings may only be taken into operation again after they have been checked by an expert.

Built-in objects and changes

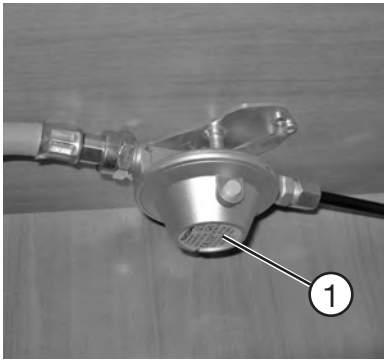
- Objects may only be built in and changes to the gas fittings made by an expert.
- Only devices with a constant connection pressure of 30 mbar may be operated.
- Following any changes to the gas fittings they must be rechecked by a recognised expert, who must provide a written confirmation.

Regulators and valves

- Use only special vehicle regulators that have a safety valve. In accordance with the German DVGW (German Association of the Gas and Water Sector) Worksheet G 607, other regulators are not permitted; they are not adequate for handling the heavy strain.
- Pressure control devices must have a fixed outlet pressure of 30 mbar. The requirements of EN 12864, Appendix D, apply accordingly. The regulator must have a rate of flow of 1.2 kg/h.
- Connect the regulator knob or high-pressure hose to the bottle carefully by hand (**NB: left-handed thread**). Do not use spanners, pliers or similar tools.
- If the temperature is below 5°C use the de-frosting facility (ice-ex*) for regulators.



High-pressure hose



Gas regulator mounted on the ceiling

Gas regulator for France and Great Britain *

Due to specific country regulations, the gas regulator in vehicles exported to France and Great Britain is firmly mounted on the ceiling of the gas bottle container. The requires the use of a high-pressure hose. Therefore, the low-pressure hoses that are normally used may not be fitted here.

- gas regulator mounted on the ceiling ①
- high-pressure hose ②

⚠ High-pressure hoses are used for gas regulators that have been mounted on the ceiling. This must be taken into account should it be necessary to replace the hose.

⚠ Connections on gas pressure regulators are screwed on counterclockwise.

High-pressure hoses are used for gas regulators that have been mounted on the ceiling. This must be taken into account should it be necessary to replace the hose.

Connections on gas pressure regulators are screwed on counterclockwise.

High-pressure gas hoses must be replaced every 5 years (the manufacturing date printed on the hose is decisive for determining when this must be done).

Before initial operation

- The waste gas pipe must be tightly connected to the heating and chimney without any leaks. It may not be damaged.
- Keep vents clear.
- Remove any snow from the chimney.
- Clear aspirating openings for combustion air in the side all from dirt and/or snow. Otherwise, the exhaust fumes could have a CO content higher than allowed.
- Do not close the safety vents.
- We recommend that you store a Type D (dry powder) fire extinguisher with a minimum capacity of 1 kg by the sliding door as well as a fire blanket next to the cooker. Familiarize yourself with the safety precautions against fire that have been set up on the grounds where you are parked.
  (see also Fire protection, Chapter 2.3).

Never use portable cooking or heating devices, except electrical heating devices (note their power consumption) - but no radiant heaters, because they can cause danger of fire and suffocation.

Read the manufacturer's operating manuals carefully!

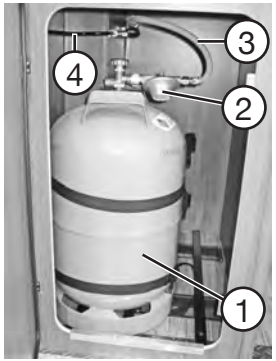
Safety instructions in gas bottle container

9.2 Gas supply

The van is equipped with a propane gas system (gas bottle not included in scope of delivery). This system is used to run the following equipment:

- Cooker
- Heating
- Hot water boiler
- Possibly special accessories

Fastening straps



Connected gas bottle

Gas bottle cabinet

The gas bottle container can be accessed in the rear of the vehicle behind a furniture door. It is accessible through the rear doors.

The gas bottle container holds two 11 kg propane cylinders ①. Via a safety regulator ② , the gas bottles are attached by a hose ③ to the supply line ④. Each bottle is fastened to the wall by two separate belts ⑤.

⚠ Gas bottles may only be carried in the gas bottle container.

The following applies to the gas bottle cabinet:

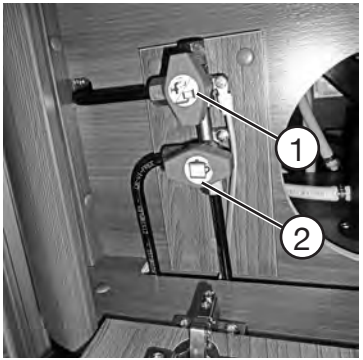
- Always check the gas cylinder mountings before driving. Stand the gas cylinders upright and close the valves.
- Pull any loose straps tight.
- A leak detection agent must always be used to check that the control knob or hose connections to the bottle do not leak every time the bottle is replaced.
- The gas bottle cabinet is not suitable for storing additional items.
- The stop valves on the gas cylinders must always be easily accessible.
- Do not close the gas bottle cabinet's air vents.
- Ensure that third parties cannot gain access to the gas bottle cabinet.

⚠ Gas bottles must be shut while driving.

Changing gas cylinders

⚠ Do not smoke or ignite open flames while changing the gas cylinders. After changing the gas bottles, check whether there is any gas escaping from the tie-in point by spraying it with leak detection spray.

- Open the flap of the gas bottle container.
- Close the main stop valve on the gas cylinder. Pay attention to the direction of the arrow.
- Unscrew the gas pressure regulator/ high-pressure hose* by hand from the gas bottle (left-handed thread).
- Loosen the fixing strap and remove the gas cylinder.
- Replace the full gas cylinder in the gas bottle cabinet and carefully fasten it using the fixing straps.
- Screw the gas pressure regulator/ high-pressure hose* by hand on to the gas bottle (left-handed thread).
- **Only when equipped with a crash sensor*:** Press on the hose rupture protection (green button) on the high-pressure hose **(p. 127).**
- Check that gas is not escaping from the connection point using leak detector spray.
- Close the door of the gas bottle container.



Gas shutoff valves

Gas shutoff valves and valves

A corresponding gas stop valve has been built in for each gas device that has been installed. These gas taps can be used to interrupt the flow of gas to each device. Each tap has been labelled with an icon for the corresponding device.

Place of installation of gas shutoff valves

- in the seating bench, accessible via the furniture flap on the side

① heating
② cooker

The following applies to stop valves and valves:

- All the valves on gas devices must be closed while driving.
- To open the valves: turn them towards the gas line, i.e. the gas cock must be turned to a horizontal position.
- No firing point may be in operation when filling the petrol tank of your vehicle on ferries or in the garage.

⚠

Should you suspect a leak in the gas system, immediately close the shutoff valves in the vehicle and the gas bottle valves in the gas bottle container.

Over the years, vibrations can cause slight leakages to occur. If you suspect that there are leakages, have your dealer or an authorised workshop for gas facilities check your system.

Never carry out leak tests near an open flame.

Gas regulator with a crash sensor *

Using the MonoControl CS and DuoControl CS, it is possible to heat the vehicle even while driving.

Should there be an accident, the integrated crash sensor automatically interrupts the gas supply, thereby preventing gas from escaping.

(Effect of delay 3.5 g ± 0.5 g; this corresponds to an impact speed of 15-20 km/h against a fixed obstacle.)

Please refer also to the manufacturer's separate operating instructions.

When exchanging gas bottles, use the enclosed screw aid to screw and unscrew the high-pressure hoses. It ensures the necessary tightening torque and prevents damage to the screws and the connection that can be caused by using the wrong tools.

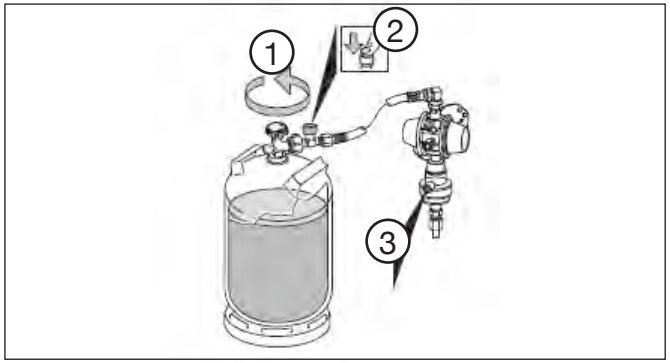


Diagram of MonoControl CS

To operate

① Open the valve on the bottle.
② Press firmly for approx. 5 seconds on the hose rupture protection (green button) on the high-pressure hose.
③ If necessary (e.g. after it has been newly mounted or the gas bottle accidentally hits against the gas pressure regulator system) press firmly for approx. 5 seconds on the green reset button on the MonoControl CS (resets the crash sensor activation element).

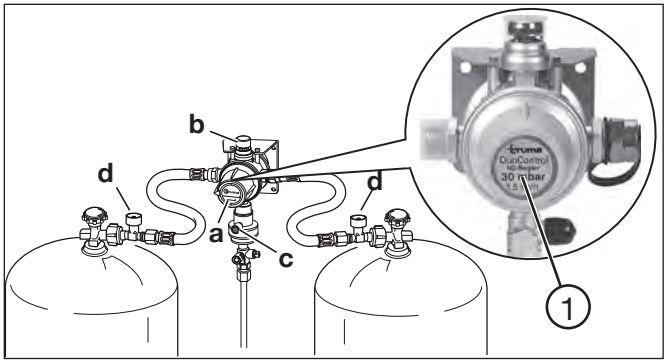


Diagram of DuoControl CS

Switching valve for the two-cylinder gas unit*

The DuoControl CS changeover valve enables you to automatically change from the operating bottle to the spare one. The crash sensor is integrated in the DuoControl; it enables you to use the heating system while driving.

It operates similar to the MonoControl CS.

a Turn the knob to the left ① or right to determine which cylinder is to be used.

b Shows the status of the cylinder in use.
Green: full
Red: empty

c crash sensor activation element
d hose protection

Function

- Attach gas cylinders and open the valves of both gas cylinders. Turn the rotary knob to the left or right as far as it will go (setting it to the centre position enables gas to be extracted from both bottles at the same time).

If the pressure in the cylinder is less that 0.5 bar, the valve will automatically switch the cylinder.

An Ice-Ex cartridge is integrated in the DuoControl CS changeover valve. It prevents the valve from freezing. Please also note the description for the TFT control panel, AUX menu **(p. 89)**.

a on (operation in summer)
b off
c on and heating (operation in winter)
d red LED
e green LED
f yellow LED de-icer (operation in winter)

Remote indicator for DuoControl CS

Remote indicator for the switching valve *

The remote indicator is coupled to the changeover valve of the two-bottle gas system.

Operation in summer

Set switch down to **a**.

LED indicates the status of the bottle in use:

full = green LED lights up

empty = red LED lights up

Operation in winter

Set switch up to **c**.

In addition to indicating the status of the bottle in use, the changeover valve will be heated (yellow LED lights up).

External gas socket

9.3 External socket for gas *

The external socket for gas is used to connect external gas devices such as a gas barbecue or lamp.

> The operating pressure of the device to be connected must be 30 mbar (1 bar = 14.5 PSI). Maximum performance of devices to be connected: 1.5 kW

The plug connection can only be hitched when the emergency shutoff valve has been closed. Push back the clutch sleeve to undo the safety latch.

The coupling valve has been constructed in such a way that the emergency shutoff valve can only be opened if a gas hose has been attached. When hitching, the plug connection is plugged into the safety coupling.

If no gas hose has been hitched, always use the protective cap to shut the opening of the valve.

> The external socket for gas is only suitable for extracting gas, not for supplying gas to the system.

Chapter 10: Built-in devices

10.1 General Information

In this chapter, you will find information on the devices that have been built into the motor home. This information refers only to the operation of these devices. To some extent, the devices described are special accessories. For further information on the individual built-in devices, please refer to the separate operating instructions that have been included in the blue service bag found in the vehicle.

Built-in devices may only be repaired by specialists.

Only the device manufacturer's original spare parts may be used for maintenance and repair work.

Any changes to the built-in devices as well as non-compliance with the rules for use will cause the guarantee to become void and lead to the exclusion of liability claims. Furthermore, the operating licence for the device will become void and, in some countries, this means that the operating licence for the vehicle is also void.

Please also refer to the instructions in **Chapter 9** for operating gas devices, gas regulators and gas bottles.

Please observe the instructions in **Chapter 7** for operating electrical devices.

10.2 Heating

You are not permitted to operate the heating system while driving!
Exception:
As an optional feature, the vehicle can be equipped with a gas pressure regulator for use while driving (e.g. Control CS).

10.2.1 Truma Combi Heating System C4/C6E*

Truma-Combi-warm air heater

The combined LPG heating consists of a warm air heater with an integrated hot water boiler (capacity: 10 l).

The heating system is fully operational with or without the hot water system.

As an optional extra, the vehicle can be fitted with the Combi-6E heating system*, which has additional heating rods for electric operation.

Place of installation:
- in the seat chest.

Exception: Model K55 F:
underneath the bed, on the left-hand side in the direction of traffic.

Initial operation

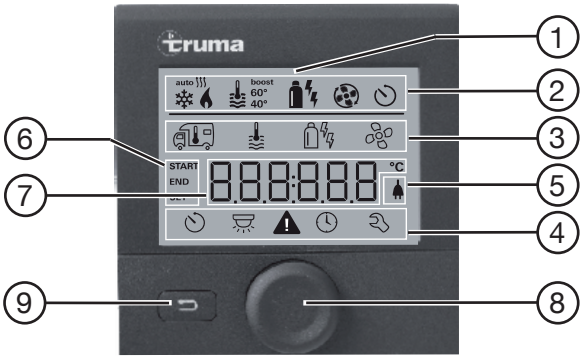
- Several air vents have been built into the mobile home. Pipes transport the hot air to the air vents. Set the air vents so that the hot air can escape to where it is required.
- Check that the chimney is clear. Remove any covers.
- Open the gas bottle and gas shutoff valve on the gas pipe.

- Only operate the device if it is in perfect technical condition.
- Always have malfunctions repaired immediately. Only repair malfunctions yourself if such malfunctions are described in the troubleshooting instructions in this manual.
- Do not carry out any repairs on or make any changes to the device.
- Only have a defect device repaired by the manufacturer or their service department.

If the system's power supply is interrupted, the time must be reset.

Use the panel by the entrance to operate the basic functions of the Combi heating system (see Chapter 7).

The change to the iNet-ready version was carried out during the current season. Depending on when the trailer was manufactured, iNet-ready functions are available, whereby the Truma CP plus control panel functions as an interface for operating connected devices via the Truma App and iNet Box.



Truma control panel “CP plus”

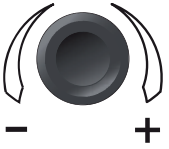
Operating and display controls

① Display
② Status line
③ Menu line (top)
④ Menu line (bottom)
⑤ Display: 230V mains voltage (charging current)
⑥ Display: timer
⑦ Settings / values
⑧ Adjusting knob / pushbutton
⑨ Reset button

The adjusting knob / pushbutton ⑧ is used to select the menus in lines ③ and ④ and change the settings. The data is shown on the display ① ; the background is illuminated. Use the reset button ⑨ to return to the previous menu.

Adjusting knob / pushbutton

The adjusting knob / pushbutton ⑧ is used to select and change specified values and parameters. The changes are saved by briefly pressing the button. Selected menu items blink.



Turn to the right (+)
- Goes through the menu list from left to right.
- Increases the values.

Turn to the left (-)
- Goes through the menu list from right to left.
- Decreases the values.

Press the button briefly
- Saves a selected value.
- Selects a menu item; changes to the setting mode.

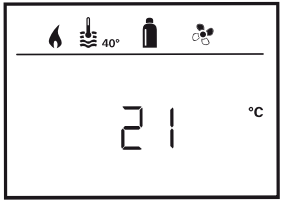
Press (3 seconds)
- Main function ON / OFF

Reset button

Press the reset button ⑨ to return to the previous menu and reject the settings. This means that the previous values will continue to apply.

To operate

Start / stand-by screen



A few seconds after the control panel has been connected to the power supply, a start screen will appear.

If nothing is entered for several minutes, a stand-by screen will automatically be displayed.

When the time is set (see “Setting the time”) the display alternates between the time and the room temperature that has been set. If no time has been set, the set room temperature will be displayed permanently.

Functions

The functions in the menu lines ③④ of the control panel can be selected in any sequence. The operating parameters are shown in the status line ② or in the display ⑤⑥.

To switch on/off

To switch on

- Press the adjusting knob / pushbutton.

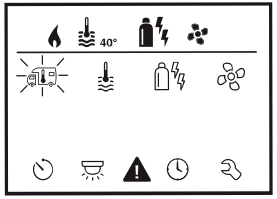
Previously set values / operating parameters will be reactivated after the control panel has been switched on.

To switch off

- Press the adjusting knob / pushbutton for longer than 4 seconds.
- **iNet-ready**: After 2 seconds, “APP” appears on the display; after a further 2 seconds, “OFF” appears on the display.

Due to an internal lag feed in the heating or air-conditioning system, it may take a few minutes for the Truma CP plus control panel to switch off.

Selecting the setting mode



Press the adjusting knob / pushbutton

The display shows the setting mode. The first icon blinks.

APP mode in connection with an iNet Box

Function

In APP mode, the connected devices as well as the Truma CP plus control panel switch to stand-by.

- no heating function
- no hot water generated
- air-conditioning system does not work
- the timer on the Truma CP plus control panel does not work

The CP plus control panel continues to receive commands via the Truma APP or the air-conditioning system's infra-red remote control. The connected devices can still be operated.

Turning on the APP mode

- Press the adjusting knob/pushbutton approx. 2 seconds until “APP” appears on the display.
- Let go of the adjusting knob/pushbutton.
- The previously saved values will be saved.

Turning off the APP mode

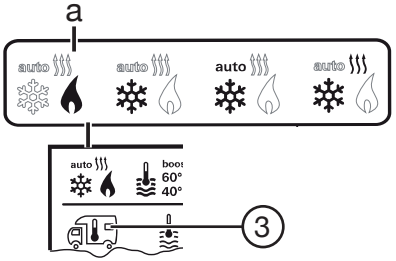
The APP mode is turned off

- when new values are transferred via the Truma APP or the air-conditioning system's infra-red remote control;
- when the Truma CP plus control panel is alerted by pressing the adjusting knob/pushbutton. The previously saved values will then be imported for renewed operation.

Changing the room temperature

Use the adjusting knob / pushbutton to select the icon in the menu line ③

- Press to switch to the setting mode.
- Use the adjusting knob / pushbutton to select the desired temperature.
- Press the adjusting knob / pushbutton to confirm the temperature.



a = Heating[1)]

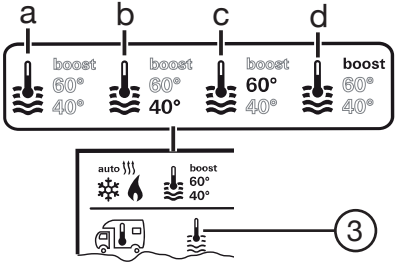
- Heating is switched on.
- Adjustable range of temperature: 5 - 30°C (in increments of 1°C)
- Use the adjusting knob / pushbutton for fast temperature changes (on stand-by screen).

[1)] The icon will continue to blink as long as the desired room temperature has not been reached.

Changing the hot water temperature

Use the adjusting knob / pushbutton to select the icon in the menu line ③

- Press to switch to the setting mode.
- Use the adjusting knob / pushbutton to select the desired temperature.
- Press the adjusting knob / pushbutton to confirm the temperature.



a = boiler[1)] is switched on
b = 40° ** hot water temperature of 40°C
c = 60° hot water temperature of 60°C
d = BOOST[1)] specifically heats up the contents of the boiler (boiler operation) fast for a max. period of 40 min.

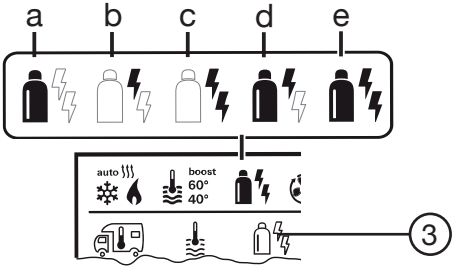
[1)] The icon will blink until the desired water temperature is reached.

[1)] Hot water temperature of 40°C can only be maintained at 40° C for a limited period of time if both the room and the water are being heated.

Selecting the type of energy *

Use the adjusting knob / pushbutton to select the icon in the menu line ③

- Press to switch to the setting mode.
- Use the adjusting knob / pushbutton to select the desired type of energy
- Press the adjusting knob / pushbutton to confirm the temperature.



Icon	Type of operation	Type of energy
a	Gas	Gas
b	EL 1	Electricity
c	EL 2	Electricity
d	MIX 1[1)]	Electricity + Gas
e	MIX 2[1)]	Electricity + Gas

[1)] Mixed operation (electric and mixed operation are optional extras)

As soon as the heating has been switched on (room temperature and hot water temperature have been activated) the type of energy selected in the previous heating operation is displayed in the status line.
Manufacturer's default setting: gas.

Special features in mixed operation

Interrupting the 230V power supply:
The heating system will switch automatically to gas operation. As soon as the 230V power supply has been reinstated, the heating system will automatically switch back to mixed operation.

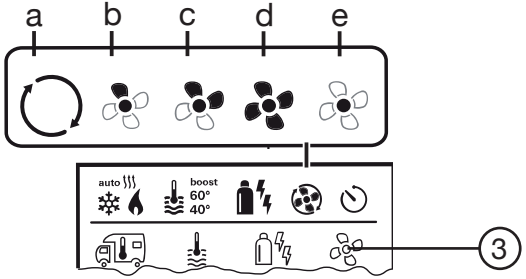
Malfunction in the combustion process (e.g. lack of fuel):
Combi Gas The heating system will switch automatically to electric operation. If it is running in mixed operation, the cause of the malfunction must be eliminated. Use the control panel to switch the heating off and then on again.

Special features in electric operation
- If the 230V power supply is interrupted and the 12V supply has been switched on, an error code will be shown on the display.
- As soon as the 230V power supply has been reinstated, the heating system will automatically be restarted using the previous settings. The error code will disappear.

.

Selecting the fan speed

Use the adjusting knob / pushbutton to select the icon in the menu line ③.
- Press to switch to the setting mode.
- Use the adjusting knob / pushbutton to select the desired fan speed.
- Press the adjusting knob / pushbutton to confirm the temperature.



Icon	Type of operation	Description
-	OFF	Fan is switched off. (Can only be used if no device is being operated.)
a	VENT[1)]	Air circulation, if no device is being operated. RPM can be selected in 10 increments.
b	ECO	Low fan speed
c	HIGH[2)]	High fan speed

d	BOOST	To heat room rapidly Available if the difference between the selected and the actual room temperature is more than 10°C.
e	FUNKTION KLIMA	

[1] Can lead to higher engine wear, depending on how often it is selected.

[2] The “HIGH” fan speed has a higher current consumption, higher noise level and higher engine wear.

As soon as the heating has been switched on (room temperature and hot water temperature have been activated) the fan speed selected in the previous heating operation is displayed in the status line. Manufacturer's default setting: “ECO”.

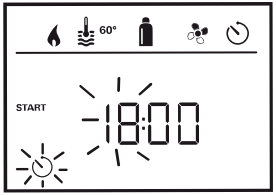
Setting the timer

The timer can only be selected if the clock on the control panel has been set.
If the timer has been activated (ON), the menu item Activate timer (OFF) is first displayed.

Use the adjusting knob / pushbutton to select the icon in the menu line ④ .

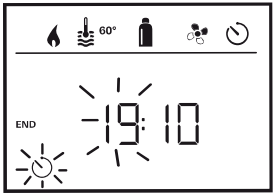
- Press to switch to the setting mode.

Entering the start time



- Use the adjusting knob / pushbutton to set the hours and then the minutes.

Entering the end time



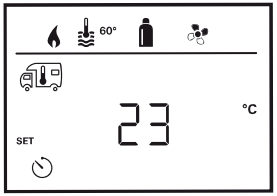
- Use the adjusting knob / pushbutton to set the hours and then the minutes.

Danger of poisoning from exhaust fumes.
The activated preselection timer switches the heating on even if the van has been parked. In closed rooms (such as garages, workshops) the exhaust fumes from the heating can lead to poisoning. If the recreational vehicle is parked in a closed room:

- close the fuel supply (gas) to the heating system;
- deactivate the preselection timer on the Truma CP plus control panel (OFF);
- switch the heating off on the Truma CP plus control panel.

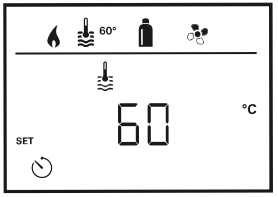
If the start/end time was exceeded during entry, the operating parameters will only be taken into account after the next start/ end time has been reached. Until then, the operating parameters set outside the timer will remain valid.

Setting the room temperature



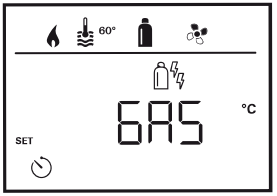
- Use the adjusting knob / push-button to select the desired room temperature.
- Press the adjusting knob / push-button to confirm the temperature.

Setting the hot water temperature



- Use the adjusting knob / pushbut-ton to select the desired hot water temperature.
- Press the adjusting knob / push-button to confirm the temperature.

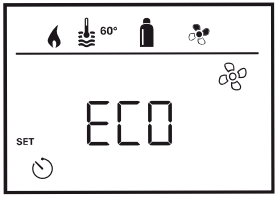
Selecting the type of energy *



- Use the adjusting knob / pushbut-ton to select the desired type of energy.
- Press the adjusting knob / push-button to confirm the temperature.

The menu item “Select type of energy” will be depicted when a heating system that uses electric heating rods has been connected (optional extra).

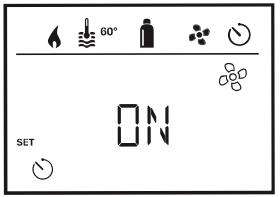
Selecting the fan speed



- Use the adjusting knob / pushbut-ton to select the desired fan speed.
- Press the adjusting knob / push-button to confirm the temperature.

The menu item “Select fan speed” will be depicted when the heating / hot water temperature has been set.

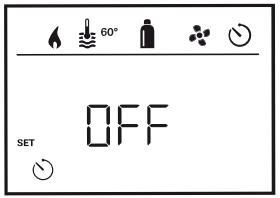
Activating the timer (ON)



- Use the adjusting knob / pushbutton to activate the timer (ON).
- Press the adjusting knob / pushbutton to confirm the time entered.

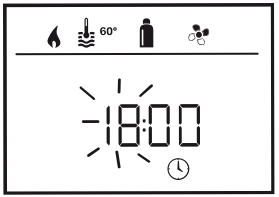
The timer will continue to remain active, even for several days, until it has been deactivated (OFF).
The icon for the timer will blink when the timer has been programmed and is active.

Deactivating the timer (OFF)



- Press to switch to the setting mode.
- Use the adjusting knob / pushbutton to deactivate the timer (OFF).
- Press the adjusting knob / pushbutton to confirm the time entered.

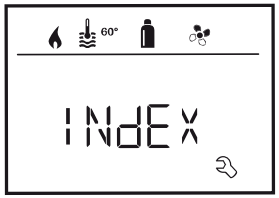
Setting the time



- The hours blink.
- Use the adjusting knob / pushbutton to set the hours (24-hour mode).
- After pressing the adjusting knob / pushbutton once again, the minutes will blink.
- Press the adjusting knob / pushbutton to confirm the time entered.

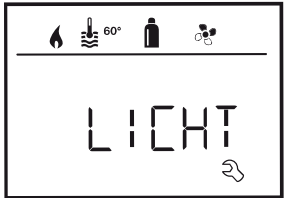
Service menu

To show the version number of the connected devices



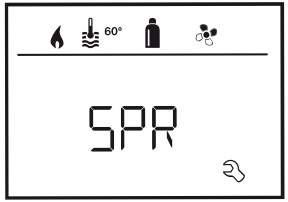
Show the version number of the heating or control panel.

Changing the background illumination of the control panel



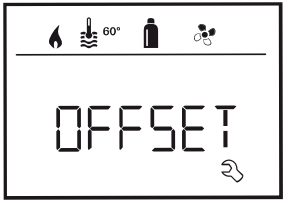
The background illumination can be changed in 10 increments.

Changing the language



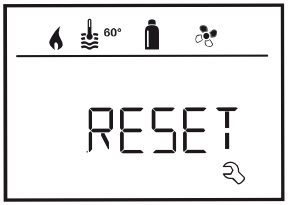
Select the desired language from the languages available (e.g. English, German, French, Italian).

Calibrating the temperature sensor (OFFSET)



The temperature sensor for the heating can be individually adjusted to the size of the vehicle. The offset can be set in increments of 1°C within a range of -5°C to +5°C.

Resetting to manufacturer's default setting (RESET)

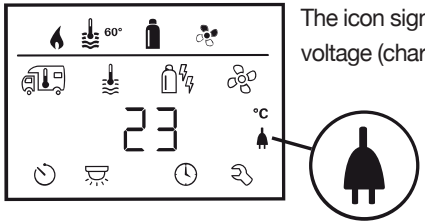


The reset function resets the control panel to the manufacturer's default setting. It deletes all of the settings you have made.

Confirming the reset

- Press the adjusting knob / pushbutton

Display: 230V mains voltage

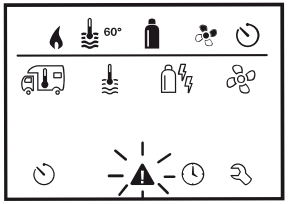


The icon signals that the 230V mains voltage (charging current) is available.

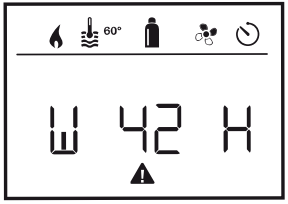
This can only be displayed in connection with a Combi E CP plus heating system that includes additional heating rods for electric operation (optional extra).

Warning

A warning icon appears to signal a warning that one of the operating parameters has reached an undefined status. In this case, the device in question will continue to operate. As soon as the operating parameter is once again within its specified range of values, the icon will disappear.



Reading out the warning code



- Use the adjusting knob / pushbutton to select the icon.
- Press the adjusting knob / pushbutton. The current warning code will be displayed. Use the error list to determine the cause of the warning and eliminate it.

W = Warning
42 = Error code
H = Heating

Cause eliminated / Return to setting mode

- Press the adjusting knob / pushbutton.

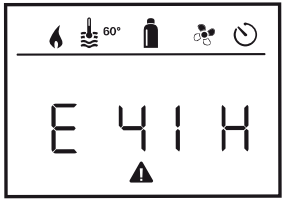
Cause not eliminated / Return to setting mode

- Press the reset button.

In this case, the warning will not be acknowledged on the control panel and the warning icon will continue to be displayed. The control panel will remain in a warning state. Other connected devices can be operated.

Malfunction

If there is a malfunction, the control panel will immediately go to “Malfunction” mode and display the Malfunction error code.



E = Malfunction
41 = Error code
H = Heating

Cause eliminated / Return to setting mode

- Press the adjusting knob / push-button.
- The corresponding device will be restarted.

Due to an internal lag feed in the connected devices, this may take a few minutes.

If the cause has not been eliminated, the malfunction will occur again and the control panel will once again go to “Malfunction” mode.

Cause not eliminated / Return to setting mode

- Press the reset button.

In this case, the malfunction will not be acknowledged on the control panel and the warning icon will continue to be displayed. The device will remain in a state of malfunction. Other connected devices can be operated.

Maintenance

This device requires no maintenance. Use a non-abrasive cloth dampened with water to clean the front. If this is not sufficient, use a neutral soap solution.

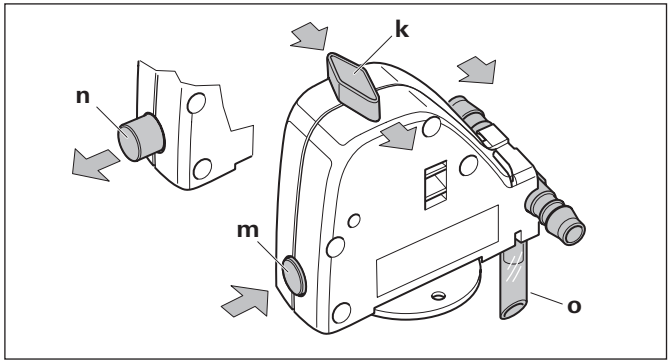
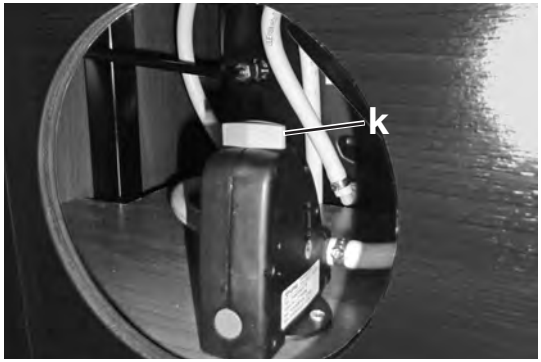


Diagram of Frost Control

FrostControl

FrostControl is a non-electric safety or drain valve. If there is a risk of sub-zero temperatures it automatically drains the content of the boiler via a drain outlet.
If the system is under excess pressure intermittent pressure equalisation will automatically take place via the safety valve.

k Rotary switch position “ON”
m Push button position “CLOSED”
n Push button position “DRAIN”
o Drain outlet (to the outside through the vehicle floor)



Safety valve for boiler (Frost Control)

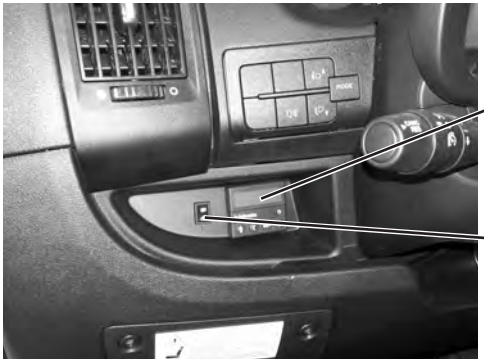
To activate

- Push in the knob at position (**m**) slightly and, at the same time, move it 90° towards position (**k**).
- If the switch is in position (k), the knob will remain in position (**m**).

To deactivate

- Turn the switch at position (**k)** by 90° so that it is parallel to the frost control.
- At the same time, the knob will jump from position (**m**) to (**n**).

The drain valve can only be closed manually using the push button (Position **m**) and the boiler filled if the valve temperature is above approx. 7°C.
If the temperature of the safety/drain valve is lower than approx. 3°C, the push button will be ejected (Position **n**) and the contents of the boiler will be drained off via the drain outlet (**o**).



Control panel for preselection timer

10.2.2 Webasto auxiliary heating

- Set the heating in the vehicle to “warm” before switching on the heating device.
- Set the vehicle's heater fan to the lowest possible level when the heating is in continuous operation. This guarantees an optimally regulated current supply.
- To heat the vehicle quickly, set the fan to a higher level.

Toggle switch motor/cabin

Motor icon pressed:

- The heating device will also heat the vehicle's motor. It is also possible to heat the superstructure.
- Heating is limited to a maximum of 60/120 minutes (if the preselection timer is used: always 60 minutes; if the telestart function is used: select from 10-120 minutes).

Cabin icon pressed:

- The heating device will predominately heat the front area of the vehicle.
- Duration of heating time: unlimited, irrespective of control panel. This enables the heating system to remain in continuous operation, as is customary in a van.

In general, the heating system may also be used while driving, e.g. to supplement the heating for the motor, which may not be sufficient.

Before leaving the van, check whether the heating system should continue to operate while the vehicle is empty. If not, the heating system must be turned off manually.

The control panel can be used to activate the preselection timer. Please refer to the manufacturer's separate operating manual for information on the functions of the preselection timer and further instructions for the heating device.

SlimLine Refrigerator

10.3 Refrigerator

Please refer to the manufacturer's separate operating instructions before using the refrigerator.

The compressor is located in the vehicle floor beneath the kitchen. Please note that, should noise be generated in this area, it comes from the compressor and need not indicate that the vehicle is defect.

Refrigerator door lock

While driving, the refrigerator door must always be closed and locked.

To open

- Tilt the handle ① down to release the lock and swing the door open or pull the refrigerator drawer out.

To close

- Swing the door shut or push the refrigerator drawer back to its original position until it noticeably clicks into place.

Danger! Risk of crushing! Do not touch the guide rails of the refrigerator drawer nor the pneumatic springs on the doors.

Do not pull down on the opened refrigerator drawer.

To operate

When operating the refrigerator for the first time, odours may become noticeable. These will evaporate after a few hours. Ensure that the living area is thoroughly aired.

The refrigerator runs on the ancillary battery. Switch the refrigerator on and off via the TFT control panel (**see 7.2, TFT control panel**). The temperature level can be set in the sub-menu. The thermostat regulates the temperature as follows:

1 = lowest cooling capacity
5 = highest cooling capacity

The cooling capacity can be influenced by:
- the environmental temperature,
- the amount of food to be conserved,
- how frequently the door is opened.

The temperature set for the refrigerator will be reached after a few hours.

Operating methods

“Automatic” operation:
The compressor operates at medium speed. It shuts itself off when the desired temperature has been reached. It switches itself back on when a predefined temperature is exceeded.

“Night mode” operation:
The compressor operates at reduced speed.

“Super cool” operation:
The compressor operates at the highest speed until the desired temperature has been reached.

Storing food

- Food should always be stored in closed containers, aluminium foil or similar materials.
- Never store heated food in the refrigerator; always let it cool off first.

The refrigerator cabinet can support a maximum load of 35 kg.

2-burner gas cooker

10.4 Gas cooker

The kitchen unit in the van is fitted with a 2-burner gas cooker.

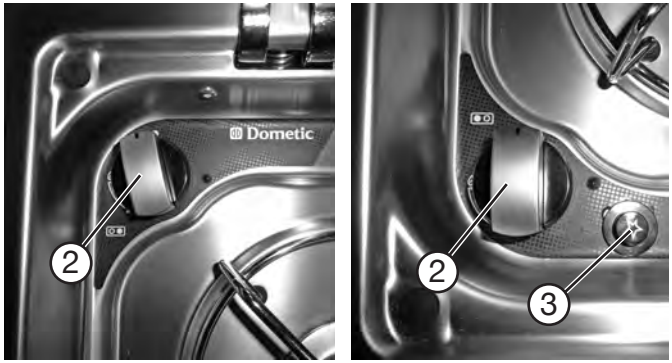
Before initial operation

- Open the bottle valve and the quick-action stop valve in the gas pipe.
- The skylight or the kitchen window must be open when operating the cooker.
- Ignition points which must be pressed for ignition when turning on the gas device should spring back to their original position after being pressed.

- The sockets above the cooker may not be used when cooking. Shut the protective caps.

⚠ Never use the cooker or other devices extracting combustion air from the interior of the vehicle to heat the vehicle. If this is ignored there is an acute risk to life due to a lack of oxygen and the odourless carbon monoxide which could be generated.

⚠ Do not operate the cooker when the glass covering is closed.



Operating elements for gas cooker

Operation

- Use the main switch on the Control Panel to turn on the 12V power supply.
- Lift up the glass cover ① **(page 148)** .
- Turn the adjusting knob ②of the burner you wish to use to the ignition position (large flame), press it and hold it pressed.
- Use the igniter ③ to ignite the flame.
  Exception: Model K55 F
  The cooker does not have an igniter. Use a lighter to ignite the flame.
- Continue to press the rotary switch ② for a further 5-10 seconds to ensure that the automatic flame guard takes effect.

- Release the rotary switch ② and turn to the desired setting (large or small flame).
- If ignition was unsuccessful, repeat the procedure.
- To switch the gas flame off, turn the adjusting knob ② **(page 149)** back to the “0” position
- Close the gas cooker's gas stop valve.

Use oven gloves or potholders when handling hot pots, pans or similar objects. You may be burned!

Never allow gas to escape without burning. Danger of explosion!

After cooking, leave the glass cover ① **(page 148)** open until the burners stop giving off heat. Otherwise, the glass cover could burst.

Never store easily flammable objects such as dishtowels, serviettes, etc. near the cooker. Danger of fire!

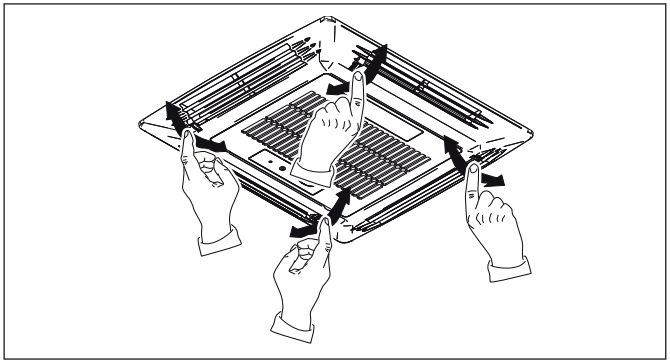
Rooftop Air Conditioning

10.5 Rooftop Air Conditioning *

The air conditioner is located instead of the roof bonnet on the ceiling in the sleeping area.

To operate the air conditioner correctly and optimize its performance, you should observe the following:

- Ensure sound thermal insulation; seal chinks and cover up glass areas.
- Do not plug or cover up air intakes and openings.
- Do not spray water into the air conditioner.
- Keep all easily inflammable material away from the system.
- Keep all doors and windows closed and only air thoroughly occasionally. When the windows are open, warm (and, therefore, humid) air will flow into the camper where it is cooled down. The resultant moisture will condense inside the camper.



To set the direction of ventilation

To set the direction of ventilation

The air supply within the vehicle can be regulated by setting the air nozzles.

Chapter 11: Accessories

Note the detailed operation instructions, installation instructions and circuit diagrams from the manufacturers when using accessories. These are located in your service package.

- Any changes to the status of the van as set by the manufacturer may endanger the driving performance and roadworthiness of your vehicle.
- Any accessories, add-ons, modifications or mounted parts that have not been approved by HOBBY may cause damage to the vehicle and impair its roadworthiness. Even if an expertise, general type approval or design approval has been provided for these parts, this does not ensure the orderly condition of the product.
- HOBBY cannot accept liability for any damages caused by parts or changes that have not been approved by HOBBY.

The following table includes a list of weights for accessories. If these parts are carried in or on the van and are not included in the standard scope of delivery, they must be taken into consideration when determining the full load.

Object	Weight[kg]
Motorisation / Chassis (cannot be retrofitted)	
FIAT Ducato 2.3 l - 130 Multijet II, 6-gear manual, 2287 ccm, 96 kW/130 PS	30.00
FIAT Ducato 2.3 l - 150 Multijet II, 6-gear manual, 2287 ccm, 109 kW/150 PS	41.00
FIAT Ducato 2.3 l - 180 Multijet II, 6-gear manual, 2287 ccm, 130 kW/177 PS	41.00
Chassis (cannot be retrofitted)	
FIAT Light Chassis, 3,500 kg	20.00
FIAT Maxi Chassis, 4,000 kg instead of FIAT Light Chassis, 3,300 kg	60.00
FIAT Maxi Chassis, 4,000 kg instead of FIAT Light Chassis, 3,500 kg	40.00
Base vehicle	
Automatic transmission, FIAT Comfort-Matic	17.00
Diesel tank, 120 litres instead of 90 litres	28.00
Fog lights	2.00
Mud flaps, rear	2.00
Surcharge for automatic climate control	0.00
Tow coupling	29.00

Object	Weight[kg]
Design variations	
Varnish: choose from silver, black or graphite-grey	0.00
Rims	
Light alloy rims 16", Original FIAT (not in connection with 115 PS engine and 3.3 t)	16.00
Metal wheel rims 16", Original FIAT (not in connection with 115 PS engine and 3.3 t)	16.00
Driver's cab	
Driver's and passenger's seats upholstered in interior fabric	3.00
Floor mats in driver's cab	2.50
REMIS pleated folding system for front and side windows in driver's cab	3.50
Thermal curtains incl. insulation of floor room	4.50
Superstructure	
Additional side window (cannot be retrofitted)	4.00
Framed window, double glazed and tinted, for additional side window	4.00
Framed window, double glazed and tinted, for standard window	8.00
Pleated insect screen for sliding door	4.00
THULE bicycle carrier for 2 bicycles	9.50
THULE-OMNISTOR awning in black, 325 cm - 400 cm	26.00 - 31.50
Upholstery combination	
"Split"	0.00
Living room	
Fitted carpet, living room, removable	10.00
Sleeping area	
Additional cushion for children's emergency bed in the seating arrangement	1.00
Water/gas/electricity	
230V external socket in outer tent, incl. satellite/TV connection	0.40
Additional AGM battery 12V/92 Ah	28.00
Gas pressure regulator TRUMA DuoControl incl. automatic changeover system, crash sensor and de-icer	3.00

Object	Weight[kg]
Gas pressure regulator TRUMA MonoControl incl. crash sensor	1.00
Gas socket, external	1.50
Hobby battery management HELLA battery sensor (IBS)	0.90
HobbyConnect remote control for on-board equipment via MyHobby app	1.20
Remote indicator for DuoControl	0.60
USB twin charger socket, 1 each for living room and bedroom	0.00
Waste water tank, heated	1.00
Wireless alarm system with gas alarm for narcotic gases, propane and butane	1.00
Heating/air-conditioning	
Auxiliary heating WEBASTO Thermo-Top	9.50
Heating TRUMA Combi 6 E instead of Combi 4	1.10
Roof air-conditioning system DOMETIC FreshJet incl. CI BUS with heating function, without lighting	32.00
Multimedia	
Additional loudspeakers in the bedroom, 2 speakers	2.00
CD/radio	2.00
Extendable shelf for flat screen TV	3.00
LED flat screen 19" incl. tuner/receiver and DVD player	2.70
Navigation system DAB+ incl. CD/DVD player, rear view camera and pitch database	4.50
Navigation system incl. CD/DVD player, rear view camera and pitch database	4.50
Reverse drive video system with colour screen and flat screen	2.00
Surcharge for DAB+ (for navigation system in package)	0.00
Packages	
Chassis package	29.90
Lighting package	1.60
Multimedia package	9.70
Starter package	13.90

Chapter 12: Maintenance and Care

12.1 Maintenance

Maintenance intervals

There are stipulated maintenance intervals for the motor home and its equipment.

The following applies for maintenance intervals

- Have the first maintenance carried out by a HOBBY dealer 12 months after the vehicle was first registered.
- All further maintenance should be carried out once a year by a HOBBY dealer.
- The maintenance of the basic vehicle as well as all built-in equipment should be carried out at the intervals given in each operating manual.

Also note the maintenance intervals for the basic Fiat vehicle.

HOBBY grants a 5-year guarantee on the absence of leaks in the caravan in accordance with the guarantee conditions.

To this end, the vehicle must be taken to your HOBBY dealer every 12 months for a chargeable inspection for leak tightness.

The inspection of the gas facilities (subject to extra cost) is to be repeated every 2 years by a liquid gas expert. This inspection is to be conducted and certified in accordance with the German Association of Gas and Water Experts, worksheet G 607, and EN 1949. The operator is responsible for scheduling this inspection.

Replace safety regulator knobs and hoses after 10 years at the latest!
Note that high-pressure gas hoses must be replaced after 5 years.

For safety reasons, spare parts for equipment must conform with the manufacturer‘s instructions and must be installed by him or a duly authorised representative.

Hobby recommends that you contact a service partner before driving there and inquire whether they have the necessary capacity (e.g. an adequate car lift) in order to avoid any misunderstanding.

12.2 Brakes

The components in the brake system are part of the General Type Approval (“Allgemeinen Betriebserlaubnis“, ABE).
If you change the components in the brake system, the type approval expires. Any changes are only possible if they have been released by the manufacturer.

It is in your own interest to have the brakes checked regularly by your Fiat workshop.

The following applies when maintaining the brake system

- Check the level of brake fluid regularly.
- Check the brake system and brake hoses regularly for leakage. Rodents often gnaw at rubber hoses.
- Use only brake fluids with the same qualities as those fluids already in the brake circuit.

For further information, please refer to the Fiat Ducato operating instructions.

Recess

Access to the taillight bulbs

12.3 Changing the taillight bulbs

Recesses are located in the upper furniture cover to the left and right of the rear doors. These recesses can be removed.

The taillight bulbs can be accessed when the recesses have been removed.

12.4 Airing

For a comfortable climate inside the van, there must be sufficient ventilation. This also avoids corrosive damage due to condensation.

Condensation is caused by

- insufficient volume inside the van
- breathing and perspiration of the passengers
- bringing in damp clothing
- operating a gas cooker

Ensure that there is a sufficient exchange of air to avoid damages due to the build-up of condensation!

To ensure the ideal air exchange, open all of the cupboard and wall cabinet doors when airing and reheating the van.

12.5 Care

The following applies for their care:

- Clean plastic parts (e.g. fenders, skirts) with water of up to 60° C and mild household cleansers.
- Clean greasy or oily surfaces with spirits.

Wash the vehicle only in places provided for this purpose.

Using cleaning materials sparingly. Aggressive cleansers, such as wheel rim cleaners, damage the environment.

Use only dishwashing liquid or commercial cleaning agents, always taking care to follow the instructions for use, and test the cleaning agent to make sure it is suitable.

Cleaning products not recommended for use

- abrasive cleaning agents (scratch the surface)
- cleaning agents that contain acetone (immediately damage the plastic)
- dry cleaning products
- diluents

- alcohols
- aggressive or solvent-based cleaners
- cleaners from the chemical group such as ketone, ester and aromatic solvents
- aromatic hydrocarbons (e.g. all automotive fuels)

Direct contact with plastics such as PVC, soft PVC and similar products (e.g. stickers) must be avoided at all cost.

It is not possible to avoid transmitting plasticizers when solvent-based contents come into contact with the aforementioned plastics and this causes the parts to become brittle.

Cleaning the exterior

The vehicle should not be washed more often than necessary.

The following applies when cleaning the exterior:

- Rinse the vehicle with a weak jet of water.
- Wash the vehicle with a soft sponge and a commercial shampoo solution. Rinse the sponge often.
- Then rinse with a generous amount of water.
- Dry the vehicle with a suede cloth.
- After washing the vehicle, leave it standing outside to dry off completely.

Dry the headlights and sockets thoroughly, as water collects there easily.

Washing with a high pressure cleaner

Do not spray stickers and external decors directly with the high pressure cleaner as they could peel away as a result.

Before washing the van with a high pressure cleaner, study its operating manual carefully. Ensure that the high-pressure nozzle is at least 700 mm away from the van when washing it. Please note that the water jet is under pressure when it comes out of the cleaning nozzle. Incorrect handling of the high pressure cleaner can result in damage to the van.

The water temperature should not exceed 60°C. Keep the water jet moving while washing. The spray from the high-pressure cleaner must never be pointed directly at the cracks of the doors or windows, acrylic windows, ventilation grills in the refrigerator, service flaps, waste gas flues or skylights. This may damage the vehicle or water could get inside the vehicle.

The following applies when waxing the surfaces

- The varnished surfaces should be treated occasionally with wax. Follow the application instructions given by the wax manufacturers.

The following applies when polishing the surfaces

- In exceptional cases, use polish to refinish weathered varnished surfaces. We recommend solvent-free polishing paste.

Use polish only in special cases and as seldom as possible, because polish removes the top layer of varnish. Polishing too often will result in wear and tear.

The following applies for tar and resin stains

- Tar and resin stains as well as other organic stains can be removed with petroleum ether or spirits.

Do not use aggressive solutions such as products containing ester or ketone.

The following applies for damages

- Repair damages immediately to avoid further damages due to corrosion. Ask your HOBBY dealer for assistance.

Skylights, windows and doors

Window panes require particularly careful treatment.

The following applies for their care

- Rub the rubber seals around doors and windows lightly with talcum powder.
- Clean acrylic glass panes only with a clean, wet sponge and a soft cloth. Cleaning with a dry cloth may scratch the panes.

Wash panes only with pure water. Never use aggressive cleaning agents that include softeners or solvents!

You will find talcum powder in auto accessory shops.

Cleaning the interior

To reduce problems arising from dampness, use water sparingly when cleaning inside.

The following applies for cushions, upholstery and curtains

- Clean cushions with a soft brush or hoover.
- Have very dirty upholstery and curtains dry-cleaned. Do not wash them yourself!
- If necessary, wash them carefully using the foam from mild-action detergent.

Cleaning instructions for materials that containTeflon

- Always treat spots immediately.
- Sponge spots, but do not rub them.
- Work from the edge towards the middle of the spot.
- Never use household cleaners to remove spots.
- Hoover cushions regularly to remove any dirt that may have collected.

We recommend the following methods for cleaning
Method A:

- Use only commercial cleaning agents that have a water basis.
- Alternatively, add two tablespoons of ammonia to 1 litre. Dip a cloth into this solution and gently sponge the spot. Turn the cloth over so that you are using a clean cloth to touch the spot.

This method is particularly suitable for removing:
- wine, milk, lemonade
- blood
- biro, ink
- urine, sweat
- mud
- vomit

Method B:

- Use only mild, water-free solvents for dry cleaning.
- Dampen the cloth and proceed as described in method A.

This method is particularly suitable for removing:
- wax, candles
- pencil

Chocolate or coffee should only be washed out with lukewarm water.

The following applies for carpeted floors

- Clean with a hoover or brush.
- If necessary, treat with carpet shampoo or a shampooing machine.

The following applies for the PVC flooring:

Sand and dust can damage the surface of PVC flooring that is walked on regularly. When in use, clean the floor daily with a Hoover or a broom.

- Use cleansing agents for PVC floors and clean water when washing the floor. Do not place fitted carpets on a wet PVC floor, as the fitted carpet and the PVC flooring could become glued together.
- Never use chemical cleansing agents or steel wool, because this will damage the PVC flooring.

The following applies for furniture surfaces

- Clean the surface of wooden furniture with a damp cloth or sponge.
- Rub dry with a dust-free cloth.
- Use mild furniture polish.

The following applies for the toilet

- Clean with a neutral liquid cleanser and a cloth that does not scratch.
- Do not use a vinegar concentrate to clean the toilet and the water system or to decalcify the water system. Vinegar concentrate can damage gaskets or parts of the system.
- The rubber seals of the toilet should be cleaned regularly with plain water and a lubricant for seals (not Vaseline or any other vegetable fats) should be applied. Applying this regularly to the washer of the valve and other seals in the toilet will ensure that they stay flexible and function longer.

Do not pour any corrosive substances down the drains. Do not pour boiling water down the drains. Corrosive substances and boiling water damage drain pipes and syphons.

The following applies for the sink and the cooker

- Clean stainless steel parts with normal household cleaners or special stainless steel cleansing agents.

The following applies for built-in equipment

- **Truma Combi heating system:**
  The boiler must be descaled regularly (at least twice a year). We recommend using suitable commercial agents for cleaning, disinfecting and taking care of the boiler. Products that contain chlorine are unsuitable. The chemical method used to control microorganisms in the device can also be supplemented by regularly heating the water in the boiler to 70° C.
- Check the drain-off of the condensation in the refrigerator regularly. If necessity, clean the condensation drain-off. If this is clogged, the condensation will collect on the floor of the refrigerator. The condensation drain-off is located at the back in the middle of the drip tray.
- Refrigerator seals should be rubbed once a year with talcum power to keep them supple and the expandable fold should be checked for tears.

Remove all spray cans with cleaners and polishes from the vehicle after finishing the upkeep! Otherwise, there is a danger of explosion at temperatures over 50° C!

12.6 Winter Lay Up for the Van

For many people, the camping season ends when the temperature starts to fall. Your van must be properly prepared for its winter lay up.

The following general rules apply

- Only leave your van in a closed space if it is dry and well-aired. Otherwise, it is better to leave your van in the open.
- To protect the tyres, jack up the van or move it slightly to a new position every two months.
- Close all gas bottles and emergency shutoff valves.
- Disconnect (or, ideally, remove) the battery and store it safe from frost. Check it about once a month to see if it is still charged; if not, charge it.
- Check the antifreeze in the cooling system and, if necessary, top it up.
- Leave space between tarpaulins and the camper so as not to hamper ventilation.

The following applies for the external structure

- Wash the van thoroughly (**see 12.5**).
- Check the vehicle for damages to the varnish and other damages. If necessary, repair these damages and carry out any other necessary repairs.

- The exterior should be treated with wax or a special polish for varnish.
- Use a protective agent to protect the metal parts of the chassis against rust.
- Check the chassis for damage and, if necessary, repair it.
- Ensure that water cannot run into the venting on the floor and the heating system.

The following applies for tanks and containers:

- Clean, disinfect, descale and completely empty all water pipes and faucets. Leave faucets open.
- Clean and empty the fresh water tank **(see Chapter 8 Water)**.
- Clean and empty the waste water tank.
- Clean and empty the toilet flushing tank and the excrement tank. Clean the toilet valve, apply a lubricant for seals and leave it open.
- Completely empty the therme/boiler.
- If your van is equipped with a hot-water heater: rinse the water heater thoroughly and empty all of the water.

The following applies for the interior fittings

- Clean the interior of your van. Hoover carpets, cushions and mattresses. If possible, store them outside the van. Otherwise, place them in such a way inside the vehicle that they do not come into contact with condensation.
- Use soapy water to clean linoleum and smooth surfaces.
- Empty and clean the refrigerator. Leave the refrigerator door open (see 10.3).
- After cleaning them, leave stowage spaces, cupboards, drawers and furniture flaps open to facilitate air circulation.
- Leave vents for forced ventilation open. If the van is kept in a closed space, you can leave the skylight open.
- Air the van thoroughly every four to six weeks when the weather is dry.
- Set up a dehumidifier (such as salt) inside the van and dry the granulate or change it regularly.
- Open the battery's circuit breaker.
- If necessary, heat the camper to prevent the build-up of mould from condensation.
- Switch off the 12 V main switch.

12.7 Winter Operation

Preparations

Your van has been designed to allow you to use it to a certain extent in winter. If you really wish to camp in winter, we recommend that you optimize your van to meet your personal requirements. Your dealer will be pleased to advise you.

The following applies for your preparations:

- Check the vehicle for damage to the paintwork or from rust and, if necessary, repair it.
- Ensure that water cannot run into the ventilation and de-aerating and heating systems.
- Use a wax-based protective agent to protect the metal parts of the undercarriage against rust.
- Preserve varnished external surfaces with suitable agents.
- Fill the petrol tank with winter diesel; check the antifreezer in the windshield cleaning unit and the coolant.

Please also refer to the information given by the manufacturers of built-in devices regarding winter.

The following applies for ventilation

During operation in winter, condensation is caused when using the camper in low temperatures. Sufficient ventilation is extremely important to ensure that the quality of the air inside the camper is good and to avoid damages to the vehicle caused by condensation.

- Do not shut vents for forced ventilation.
- Set the heating to maximum power when heating up the van. Open stowage spaces, cupboards, drawers, furniture flaps, curtains, shades and plissés. This enables you to achieve optimum ventilation and de-aerating.
- Only heat the van when the recirculation air system is switched on.
- Every morning, air all of the cushions, mattresses and stowage spaces and dry any damp spots.
- Air thoroughly with fully opened doors and windows several times a day.

If, despite all of these measures, condensation forms, simply wipe it away.

Before entering the vehicle, remove the snow from your clothes and shoes to prevent an increase in humidity.

The following applies for heating

- Both the air intake as well as the exhaust gas openings of the heating system must be kept free of snow and ice.
- It takes longer to heat up the vehicle in winter, especially to heat hot water.
- Do not let the interior cool down completely when you are away or at night; set the heating to low and leave it on.

⚠ Continue to heat the vehicle while you are sleeping!

- The van uses considerably more gas in winter than in summer. Two 11 kg bottles of gas will be used up in just under one week.
- Therefore, should you stay longer in one place, it is worthwhile to set up an outer tent. It will help to acclimatise the van and keep the dirt out.

The following applies for tanks and containers

- If the interior is sufficiently heated, the fresh water tank, water pipes and boiler should not freeze. Fill all of the water containers only after the interior has been thoroughly heated.
- When the heating is on, the waste water tank is heated. In severe frost, also add an anti-freezing compound or table salt to the waste water. If the vehicle is not being used, the waste water tank must be emptied completely.
- The toilet can be used normally, even in cold weather, as long as the interior of the van is heated. The excrement tank should be emptied if there is danger of frost.

At the end of the winter season

The following applies for the care of the vehicle

- Thoroughly wash the underbody and the motor. This removes corrosive thawing agents (salts, alkali).
- Clean the exterior and use normal car wax to preserve metal parts.
- Do not forget to remove flue extensions, etc.

Saving energy in winter

It is very easy to save energy inside your van. This applies especially to heating in winter.

The following applies for saving energy

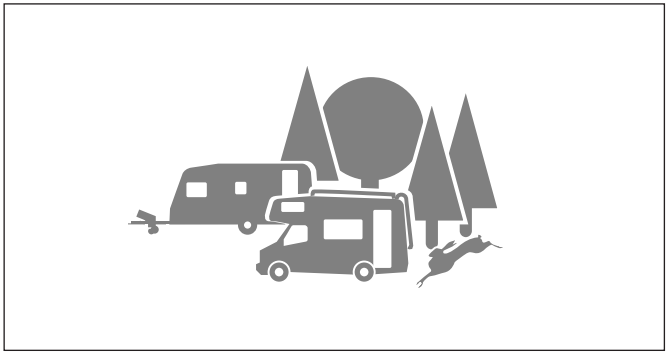
- Meter the exact use of ventilation in the vehicle and the heating valve.
- Attach the winter mats to the side windows and windshield of the driver's cab (e.g. thermal curtain, see 6.9).
- Attach the insulating mat between the driver‘s cab and the interior of the van (not included in scope of delivery).
- Open the outside door as seldom and briefly as possible.
- If you are camping in winter, attach a small outer tent. This will offer protection against the cold.

Chapter 13: Sanitation and Environmental Protection

13.1 The environment and traveling

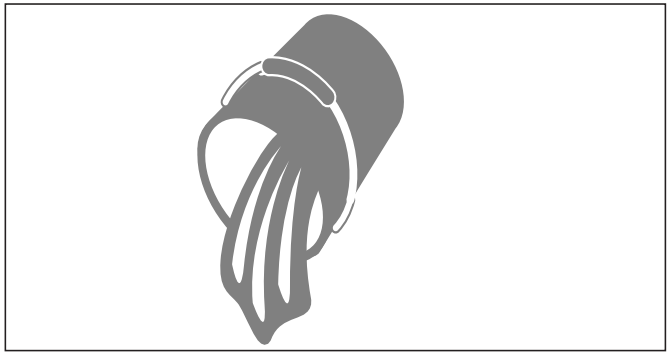
Environmentally fair use

It is only natural that owners of motor homes and vans have a special responsibility for the environment. Always use your vehicle in an environmentally friendly way.



The following applies for environmentally fair use

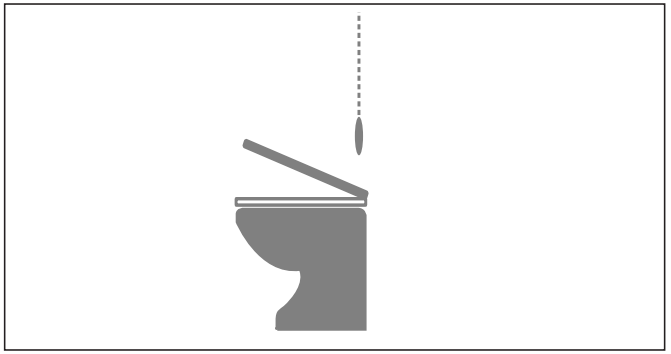
- When spending longer periods in towns and cities ask about specially designated campsites for vans and use them.
- Do not spoil the peace and cleanliness of nature.
- Dispose of wast water and rubbish in the proper way.
- Set an example so that motor home and van drivers are not generally held to be pollutionists.



The following applies for waste water

- Collect waste water on board only in built-in waste water tanks or, if necessary, in suitable containers!
- Never empty waste water in open spaces or down manholes! Generally, the public waste water system does not run through clarification plants.
- Empty your waste water tank as often as possible, even if it is not completely full (hygiene). If possible, rinse out the waste water tank with fresh water after emptying.

Only empty your waste water tank in special places for waste water disposal, but never in open spaces! Generally, waste water stations are found in motorway service areas, campsites or petrol stations.



The following applies for wastes

- Only use approved sanitary cleansing products in the waste tank.

You may be able to avoid the use of sanitary liquids by installing an activated carbon filter system (sold as an accessory)!

Use sanitary liquids very sparingly. An overdose is no guarantee of preventing odours!

Sanitation

- Never allow the waste tank to become too full. Empty the tank immediately as soon as the level indicator lights up.
- Never empty wastes down manholes! Generally, the public waste water system does not run through clarification plants.

Empty the waste tank in special places for sanitary disposal, but never in open spaces!

The following applies for waste

- Separate your waste and put appropriate materials in the recycling bins.
- Empty waste bins as often as possible in the appropriate bins or containers. This prevents unpleasant odours and the problem of collecting rubbish on board.

The following applies for picnic spots

- Always leave picnic spots clean and tidy, even if you dispose of someone else‘s waste.
- Do not let the vehicle's engine run unnecessarily while the vehicle is standing still. When the transmission is in neutral, a cold engine generates more harmful emissions. The quickest way for the engine to reach its operating temperature is while driving.

Careful use of the environment is not only in the interest of nature, but also of motor home and van drivers everywhere!

13.2 Returning the vehicle

If you should ever have to give up your van and have it recycled, the manufacturer of the basic vehicle is responsible for taking it back (status at the time of printing).

This means that your HOBBY van must be taken back free of charge by any Fiat dealer and expertly recycled.

Chapter 14: Technical Data

14.1 Chassis Data

Hobby Modell	Model	Type	Base vehicle	Motorisation[3] Model	exhaust gas emissions	Chassis	Tow-bar Sawiko[2]			Belt system Aguti	Seats
							Type	Tow coupling, complete	Spherical head		
FIAT Ducato X290											
K55 F	Vantana	K1	Ducato Light	115 PS (85 kW)	Euro 6[5]	Hochdach L2H2	Boss C042A/C	30.955	rigid	G2000 (Art. 114097)	4
K60 F	Vantana	K1	Ducato Light	115 PS (85 kW)	Euro 6[5]	Hochdach L4H2	Boss C042A/C	30.955	rigid	G2000 (Art. 116915)	4
K60 Fs	Vantana	K1	Ducato Light	115 PS (85 kW)	Euro 6[5]	Hochdach L4H2	Boss C042A/C	30.955	rigid	G2000 (Art. 116915)	4
K60 FT	Vantana	K1	Ducato Light	115 PS (85 kW)	Euro 6[5]	Hochdach L4H2	Boss C042A/C	30.955	rigid	G2000 (Art. 116915)	4
K65 E	Vantana	K1	Ducato Light	115 PS (85 kW)	Euro 6[5]	Hochdach L5H2	Boss C042A/C	30.955	rigid	G2000 (Art. 116915)	4
K65 Es	Vantana	K1	Ducato Light	115 PS (85 kW)	Euro 6[5]	Hochdach L5H2	Boss C042A/C	30.955	rigid	G2000 (Art. 116915)	4
K65 FT	Vantana	K1	Ducato Light	115 PS (85 kW)	Euro 6[5]	Hochdach L5H2	Boss C042A/C	30.955	rigid	G2000 (Art. 116915)	4

All measurements in [mm] all weights in [kg]

1) without wing mirror
2) tow coupling is a special accessory
3) FIAT: 2.3 Multijet 115 CV: 85 kW (115 PS); 2.3 Multijet 130 CV: 96 kW (130 PS); 2.3 Multijet 150 CV: 110 kW (150 PS); 2.3 Multijet 180 CV: 130 kW (177 PS)
4) The trailer load increases at a motorisation for 2.3 Multijet 130 CV, 2.3 Multijet 150 CV and 2.3 Multijet 180 CV to 2,500 kg.
5) Euro 6 in Series 18036 and then generally from 18145 onwards. Previously produced trade-fair vehicles and series: Euro 5b+

t.p.o.w. [kg]	Permiss. front axle load	Permiss. rear axle load	Unbraked trailer load [2]	Braked trailer load [2]	Max. permissible drawbar load [2]	Maximum towing weight	Total length	Height	Width [1]	Front tread width	Rear tread width	Wheel base	Front projec-tion	Rear projec-tion
3300	1750	1900	750	2000[4]	100	5300	5413	2642	2050	1810	1790	3450	948	1015
3300	1750	1900	750	2000[4]	100	5300	5998	2642	2050	1810	1790	4035	948	1015
3300	1750	1900	750	2000[4]	100	5300	5998	2642	2050	1810	1790	4035	948	1015
3300	1750	1900	750	2000[4]	100	5300	5998	2642	2050	1810	1790	4035	948	1015
3500	1850	2000	750	2000[4]	100	5500	6363	2642	2050	1810	1790	4035	948	1380
3500	1850	2000	750	2000[4]	100	5500	6363	2642	2050	1810	1790	4035	948	1380
3500	1850	2000	750	2000[4]	100	5500	6363	2642	2050	1810	1790	4035	948	1380

14.2 Load increased

Hobby Model	Model	Type	Base vehicle	Seats	t.p.o.w. [kg]	Permissible front axle load	Permiss. rear axle load	Unbraked trailer load 3)	Braked trailer load 3)	Max. permissible drawbar load 3)	Maximum towing weight
Load increase for Vantana to 3500 kg											
K55 F	Vantana	K1	Ducato Light	4	3500	1850	2000	750	2000 1)	100	5500
K60 F	Vantana	K1	Ducato Light	4	3500	1850	2000	750	2000 1)	100	5500
K60 Fs	Vantana	K1	Ducato Light	4	3500	1850	2000	750	2000 1)	100	5500
K60 FT	Vantana	K1	Ducato Light	4	3500	1850	2000	750	2000 1)	100	5500
Load increase for Vantana to 4000 kg											
K55 F	Vantana	K1	---	---	---	---	---	---	---	---	---
K60 F	Vantana	K1	Ducato Maxi	4	4000	2100	2400	750	2500	100	6500
K60 Fs	Vantana	K1	Ducato Light	4	4000	2100	2400	750	2500	100	6500
K60 FT	Vantana	K1	Ducato Maxi	4	4000	2100	2400	750	2500	100	6500
K65 E	Vantana	K1	Ducato Maxi	4	4000	2100	2400	750	2500	100	6500
K65 ES	Vantana	K1	Ducato Light	4	4000	2100	2400	750	2500	100	6500
K65 FT	Vantana	K1	Ducato Maxi	4	4000	2100	2400	750	2500	100	6500

All measurements in [mm] all weights in [kg]

1) The trailer load increases at a motorisation of 96 kW (130 PS), 110 kW (150 PS) and 130 kW (177 PS) to 2,500 kg
2) without wing mirror
3) tow coupling is a special accessory

Load increased for van to 4000 kg using a maxi chassis
(cannot be combined with 115 PS and wheel base 3450 mm)

Total length	Height	Width [2)]	Front tread width	Rear tread width	Wheel base	Front projection	Rear projection
5413	2642	2050	1810	1790	3450	948	1015
5998	2642	2050	1810	1790	4035	948	1015
5998	2642	2050	1810	1790	4035	948	1015
5998	2642	2050	1810	1790	4035	948	1015
---	---	---	---	---	---	---	---
5998	2669	2050	1810	1790	4035	948	1015
5998	2669	2050	1810	1790	4035	948	1015
5998	2669	2050	1810	1790	4035	948	1015
6363	2669	2050	1810	1790	4035	948	1380
6363	2669	2050	1810	1790	4035	948	1380
6363	2669	2050	1810	1790	4035	948	1380

14.3 Vehicle and equipment weights

Model	Series	Weight of basic vehicle	Driver	Diesel [kg]	Unladen weight [kg]	Basic equipment	Mass when vehicle is ready to start	t.p.o.w. [kg]	Overload weight
FIAT Ducato X290									
K55 F	Vantana	2430	75	69	2574	121	2695	3300	605
K60 F	Vantana	2576	75	69	2720	121	2841	3300	459
K60 Fs	Vantana	2583	75	69	2727	121	2848	3300	452
K60 FT	Vantana	2570	75	69	2714	121	2835	3300	465
K65 E	Vantana	2684	75	69	2828	121	2949	3500	551
K65 Es	Vantana	2690	75	69	2834	121	2955	3500	545
K65 FT	Vantana	2665	75	69	2809	121	2930	3500	570

14.4 Tyres and rims

	Light chassis					Series		Optional extra[1)]	
Hobby Model	**Series**	**t.p.o.w. [kg]**	**Perm. axle load front**	**Perm. axle load rear**	**Tyre size**	**Metal wheel rim**	**Tyre size**	**Metal wheel rim, optionally alloy wheel rim**	**Wheel attachment***
FIAT Ducato X290									
K55 F	Vantana	3300 / 3500	1750 / 1850	1900 / 2000	215/70 R 15 CP	6 J x 15, ET 68	225/75 R 16 CP	6 J x 16, ET 68	5 / 71 / 118
K60 F	Vantana	3300 / 3500	1750 / 1850	1900 / 2000	215/70 R 15 CP	6 J x 15, ET 68	225/75 R 16 CP	6 J x 16, ET 68	5 / 71 / 118
K60 Fs	Vantana	3300 / 3500	1750 / 1850	1900 / 2000	215/70 R 15 CP	6 J x 15, ET 68	225/75 R 16 CP	6 J x 16, ET 68	5 / 71 / 118
K60 FT	Vantana	3300 / 3500	1750 / 1850	1900 / 2000	215/70 R 15 CP	6 J x 15, ET 68	225/75 R 16 CP	6 J x 16, ET 68	5 / 71 / 118
K65 E	Vantana	3500	1850	2000	215/70 R 15 CP	6 J x 15, ET 68	225/75 R 16 CP	6 J x 16, ET 68	5 / 71 / 118
K65 Es	Vantana	3500	1850	2000	215/70 R 15 CP	6 J x 15, ET 68	225/75 R 16 CP	6 J x 16, ET 68	5 / 71 / 118
K65 FT	Vantana	3500	1850	2000	215/70 R 15 CP	6 J x 15, ET 68	225/75 R 16 CP	6 J x 16, ET 68	5 / 71 / 118

1) 16" wheels not in connection with motorisation of 85 kW (115 PS).

1) 16" wheels not in connection with technically permissible maximum weight of 3,300 kg.

* No. of tyre bolts / centralising collars / bolt circle

The vehicles are restricted to the size of the tyres with which they were produced and homologated during the 1st stage (FIAT). Subsequent changes to the tyres are not permitted.

Tyres and rims for loaded vans

Maxi chassis (increased load)

t.p.o.w. [kg]	Perm. axle load front	Perm. axle load rear	Tyre size	Metal wheel rim, optionally alloy wheel rim	Wheel attachment*
---	---	---	---	---	---
4000	2100	2400	225/75 R 16 CP	6 J x 16, ET 68	5 / 78 / 130
4000	2100	2400	225/75 R 16 CP	6 J x 16, ET 68	5 / 78 / 130
4000	2100	2400	225/75 R 16 CP	6 J x 16, ET 68	5 / 78 / 130
4000	2100	2400	225/75 R 16 CP	6 J x 16, ET 68	5 / 78 / 130
4000	2100	2400	225/75 R 16 CP	6 J x 16, ET 68	5 / 78 / 130
4000	2100	2400	225/75 R 16 CP	6 J x 16, ET 68	5 / 78 / 130

14.5 Tyre pressure values

Van			
Tyres	**Tyre pressure (bar)**		**Basis**
Camping tyres (CP)			
215/70 R 15 CP	front: 5,0	rear: 5,5	FIAT
225/75 R 16 CP	front: 5,5	rear: 5,5	FIAT
Standard and winter tyres (C)			
215/70 R 15 C	front: 4,0	rear: 4,5	FIAT
225/75 R 16 C	front: 5,2	rear: 5,2	FIAT

14.6 Refrigerator SlimLine RMVOC90

Voltage:	12 V⎓
Rated current:	3,5 A (12 V⎓)
Cooling capacity:	0 °C to +12 °C
Gross capacity:	90 l
Net capacity:	88 l
Maximum load:	35 kg
Energy consumption (with +5 °C interior temperature and +25 °C ambient temperature):	30 Ah/24 h
Climatic class:	ST
Ambient temperature:	+16 °C to +38 °C
Relative humidity:	max. 90 %
Constant inclination:	max. 30°
Noise emission:	42 dB(A)
Dimensions (Wx Hx D):	1430 x 426 x 381 mm
Refrigerator weight:	20 kg
Compressor weight:	6 kg
Refrigerant quantity:	70 g
CO2 equivalent:	0,058 t
GWP:	1430
Test/certificates:	CE E1

The refrigerant circuit contains R134a.
Contains fluorinated greenhouse gases
Hermetically sealed equipment

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Hobby-Wohnwagenwerk
Ing. Harald Striewski GmbH
Harald-Striewski-Straße 15
D-24787 Fockbek/Rendsburg www.hobby-caravan.de