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## **Welcome.**

Congratulations on your purchase of an Auto-Sleeper motorhome. We are confident it will give you many years of pleasure.

This handbook has been compiled to enable you to obtain the maximum pleasure from your vehicle. It contains the appliance instructions along with advice on safety matters.

Please read this Handbook thoroughly so that you are conversant with all the motorhome systems, operating instructions and precautions.

Failure to observe these recommendations or precautions may result in incorrect operation of equipment and subsequent risk to occupants.

Information leaflets and literature on safe operation of appliances and equipment fitted to your motorhome are included in the Auto-Sleeper Customer Pack. Please read these carefully prior to use.

Should you experience any difficulties contact your dealer who will be pleased to offer advice.

It is the policy of Peugeot and Auto-Sleeper to continually improve their vehicles, so whilst the details contained in this Handbook are correct at the time of going to press, they reserve the right to alter the specifications at any time without notice.

Auto-Sleeper motorhomes offer a variety of customer uses and whilst each vehicle features the optimum storage, fluid, seating and sleeping capabilities, it is the customer's responsibility to select the proper combinations of loads without exceeding weight capacities.

Your Auto-Sleeper motorhome conforms to the European standard of EN 1646.

## **Model**

This Handbook covers the Peugeot Warwick Duo, based on Peugeot Boxer 335 L3 H2 long wheelbase high roof window van.

## **Gas System**

This handbook is for use on vehicles with a 30mbar gas system. The gas system pressure is noted on a label in the gas locker.

## **Conversion Type**

Van conversion with an end lounge which converts into two single beds or a large double bed.

## **Climatic Conditions**

The motorhome is designed for use in temperate climates, and is certified Grade 1 in accordance with EN 1646-1: 2004., indicating an effective heating system is fitted but has not been tested for thermal performance.

## **Handbook**

Any queries should be addressed to your Auto-Sleeper dealer.

## **Appliance Instructions**

The appliance instructions included have been extracted from those supplied from the appliance manufacturers.

## **Automotive - Peugeot**

For all automotive matters you should refer to the Peugeot vehicle instructions manual. This includes tyre pressures, referring to the type of tyres fitted.

The Auto-Sleeper conversion does not affect the tyre pressures in any way as it is built within the design envelope of the base vehicle.

## **IMPORTANT:**

In the interests of safety, replacements parts for appliances must conform to the manufacturer's specification and should be fitted by them or an authorised agent.

Your Auto-Sleeper conforms to the CEN Standard EN1646-1/2004 for habitation requirements relating to Health and Safety.



## INTRODUCTION

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To deal with your queries efficiently, always quote your vehicle's production number which can be found in the glove compartment.

Please read and complete the warranty registration card supplied with your vehicle; and return to the address below, without delay.

Auto-Sleepers Limited,  
Orchard Works,  
Willersey,  
Nr Broadway,  
Worcestershire  
WR12 7QF

Tele: 01386 853338

Fax: 01386 858343

E-mail: [aftersales@auto-sleepers.co.uk](mailto:aftersales@auto-sleepers.co.uk)



## Statement

Auto-Sleepers Limited (hereinafter called “the Company”) hereby guarantees the body conversion of the motorhome against failure arising through defects in workmanship or material under normal use and service for a period of two years from the date of purchase or registration whichever is the earliest. Subject to the limitations and conditions specified the Company will, during the warranty period, repair free of charge any defects which arise in the conversion part of the motorhome and which are found on inspection to result from faulty workmanship or materials.

## Condition

The benefit of this warranty shall apply only to the Purchaser, including those subject to hire purchase or credit sale agreements, and can be transferred at a cost of £50 plus VAT to subsequent owners until it expires. Note that this is not the case with the optional third year warranty package taken out at the time of purchase the transfer of which is subject to a charge.

It is a condition of this Warranty that the motorhome is delivered to an authorised dealer or distributor of the Company (or the Company's factory at the Company's discretion) for inspection and afterwards collected from there at the expense of the Purchaser.

This warranty does not extend to faults attributable to wear and tear or to defects repaired by or on the instructions of the Purchaser without first obtaining the Company's written authorisation. Faults attributable to wilful damage, negligence, abnormal conditions and failure to follow the Company's instructions (whether oral or in writing), misuse or alteration are excluded. Ancillary equipment i.e. awnings, bicycle racks, aerials etc are not covered by this warranty.

This warranty does not apply to a motorhome that has been subject to overloading or otherwise misused or has not been maintained in accordance with the Company's recommendations contained in the handbook.

This warranty applies only to the body conversion and does not cover any failure or defect in the chassis or engine.

Where, under the terms of this warranty a replacement item is supplied the conditions of the warranty shall apply to that item for the remaining period of the original warranty term covering the defective part.

It is a condition of this warranty that the Purchaser shall notify an authorised dealer or distributor of the Company of the model, type, and job number of the vehicle and provide details of the alleged defect within 14 days of its discovery.

It is a condition of this warranty that the conversion warranty is subject to an annual Habitation Check, carried out by an authorised dealer.

Any disagreement between the Company and the Purchaser as to the interpretation of this warranty shall be referred for determination to an independent arbitrator to be appointed by mutual agreement or in the event of no agreement by the Society of Motor Manufacturers and Traders.

This warranty is valid only in the European Union and the Company's distributors, dealers or agents have no authority to vary its terms. **The card must be received within 14 days of registration for the warranty to be active.**

This warranty becomes valid only when the Company has received the completed registration card.

The Purchaser's attention is drawn to the Motor Manufacturers Warranty that covers the chassis, body and engine of the motorhome.

The Purchaser's attention is also drawn to the fact that these terms and conditions do not affect the Purchaser's statutory rights.



## **BODY CONSTRUCTION:**

**Peugeot Boxer L3 H2 window van.**

### **Body paint colours:**

- White
- Metallic Silver
- Volcano Red
- Clipper Blue
- Horizon Yellow
- Silverstone Green

**Floor Vinyl:** Dark Wood Block.

**Furniture:** Linneman Cherry.

**Furniture fittings:** Chrome.

**Work Surfaces and Table finish:** Minstrel.

**Carpet:** Oasis Madrid.

**Curtains, Cushions/Upholstery:** Phoenix,  
various colours.

**Exterior Graphics:** BS1770.



## THE COUNTRY & COASTAL CODES

Upon arrival at your destination you should be aware of the Country Code relating to motorhome owners. This is entitled the *Motor Caravanners' Code*.

### Code of Conduct - Camp Sites

#### Arrivals

- Report to reception immediately on arrival.

#### Vehicle Movement

- Keep to roadways unless otherwise directed.
- Adhere to speed limits. Note that these are generally 10 mph. (Remember that the stopping distance on grass is considerably greater than on tarmac).
- Only a person in possession of a current driving licence may drive on the site.
- Park correctly as advised on your pitch. Where possible leave 20ft of free space around your vehicle.

#### Use of Site

- Use the electrical mains hook-up in the correct manner and with caution.
- Ensure that all fresh water taps/connections are turned off after use.
- Have care and consideration when using all facilities (toilets and showers etc.) and leave them clean and tidy. Young children should be escorted.

To avoid possible damage to sewage purification works, only approved chemical fluids must be used. Under no circumstances may coal tar, phenol or caustic-based fluids be used. Disposable napkins and similar bulky items must not be put into chemical closet emptying points but should be wrapped in a polythene bag and placed in the container provided. (Put all litter in containers marked for the purpose).

#### Noise

- Do not make excessive noise.

- Children should be restrained from making excessive noise.
- Flying kites and model aircraft and the use of items like catapults or air-guns as well as ball games should not be permitted among, or close to, motorhomes.
- Musical instruments, record players, radios and televisions should not be used to the inconvenience of other people on site.
- Open and close doors quietly.
- Power generators must be adequately silenced and used with consideration.

#### Dogs and Pets

- All dogs and other pets should be kept under control.
- Unless permission has been granted, no animal should be allowed loose on the site and leads must not exceed 10ft.
- No animal should be allowed in the shower/toilet blocks.
- Do not let dogs foul the site.

#### Fire Precautions

Adhere to and make note of all fire precautions concerning the whereabouts of the fire points.

Although not compulsory, it is recommended that a 1 kg (2lb) dry powder fire extinguisher is carried. It should comply with BS 5423 and be marked BSI or FOC approved. It is important to check at regular intervals that the extinguisher is working as is required by types meeting BS 5423.

Careful thought is necessary for the positioning of the extinguisher, which should be near the door but not too close to the cooking equipment where sudden flames could make it unreachable. In the kitchen area, a fire blanket is a worthwhile precaution.

Unless permission has been granted, barbecues should not be used. When permission has been given, consideration should be given to the annoyance that can be caused to other users of the site. Open fires are not allowed.



## Awnings and Tents

Awnings and tents should only be used when permission has been obtained.

When on grass and staying for more than a few days, the ground sheet and/or side flaps of awnings should be periodically raised in order to avoid damage to the ground.

## Departure

- Leave the pitch clean and tidy.
- On leaving, check out with the reception paying the required dues.

## Wild camping

Camping away from licensed sites, without the permission of the landowner or his agent, is not allowed in the United Kingdom. When permission has been granted, all aspects of this Code should be adhered to.

### *On no accounts should:*

- Litter be disposed of other than in receptacles provided.
- Water be allowed to escape from the vehicle.
- Chemical toilets be emptied except into the disposal places agreed with the landowner.
- Washing or similar be hung outside the vehicle.

## Parking

Motorhomes should only be parked in approved places.

When using the facilities of a motorhome at such times, care and consideration should be given to those around them.

## Driving

When using a motorhome on either the public highway or private road, the Highway Code should be complied with and full consideration given to other road users.

In the event of a motorhome travelling slowly and there being a queue of traffic behind, the driver of the motorhome should, where possible, pull over in order to let the other traffic pass.

When the vehicle is in motion it is compulsory

that all passengers are seated and seat restraint straps worn.

Before moving off, elevating roofs **MUST** be lowered and correctly secured, and top hinged windows closed. Likewise all doors and access lockers for gas containers and chemical toilets must be properly closed.

Exterior steps should be properly retracted and secured.

When the vehicle is being refuelled, or on a ferry, all gas systems must be turned off.

Gas appliances should only be used when the vehicle is in motion when the manufacturer of the appliance permits such use.

## Handbook

Before using a motorhome all aspects of the handbooks produced by the chassis manufacturer and the converter must be read and adhered to.

## Environment

Care and consideration should be taken to protect the environment.

*Observe the Country and Coastal Codes shown below:*

### **The Country Code**

Enjoy the countryside but respect its life and work.

More people than ever before are exploring the countryside, interested in farming, plant life, bird watching or just observing the general wildlife. Whatever your interest, there is a lot to learn, but please observe the following code.

Guard against all risk of fires. Hay and heath land catch alight easily and once ablaze are very hard to put out. *Remember: Fire Spreads Quickly.*

- Keep to public paths across farmland.
- Use gates and stiles to cross fences, hedges and walls.
- Leave livestock, crops and machinery alone. View from a distance.
- Take your litter home - it is unsightly and harmful to wildlife.





- Help to keep all water clean.
- Take special care of country roads.
- Make no unnecessary noise. Most animals are very timid, noises can disturb them unnecessarily. If you want to get the best out of the country, go quietly.

## **The Coastal Code**

As our coastlines are increasingly used for recreation and education, the following suggestions are made to enable us to enjoy our inheritance and preserve it for posterity.

- Do not trample about, or move rocks unnecessarily.
- Do not frighten seals or seabirds.
- Do not spear fish.
- Do not spill detergents, solvents or fuel from boats as these can kill marine life.
- When sailing, moderate your speed - the wash from a fast boat can destroy banks and nests.
- Live mollusks and crustaceans need not be collected as souvenirs - dead shells can usually be found.
- Shellfish can take years to grow and fines can be imposed for not observing national regulations.
- Do not pull up seaweed unnecessarily.
- Make your visit instructive - not destructive.
- Look at material, don't remove it. Take notes and photographs, not specimens.
- Observe bye-laws and be considerate to others.
- National Trust property or Country Parks have regulations to protect the wildlife. Follow these.

## **Fire Precautions**

You should also make yourself aware of the local fire regulations.





## YOUR MOTORHOME (Weights explained)

### Mass in Running Order (MRO)

The weight of your motorhome as it leaves the factory, as new with standard fixtures and fittings, plus an allowance for driver and 90% fuel.

### Maximum Technically Permissible Laden Mass (MTPLM)

The maximum weight of the vehicle when fully laden for use on the road. See specification section for actual figure.

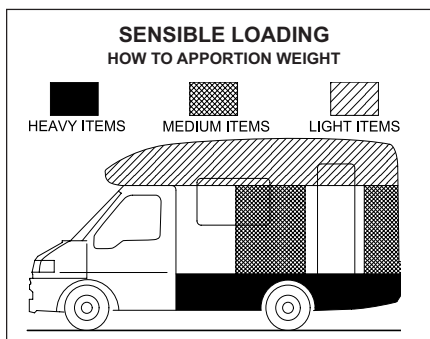
### User Payload

The load margin (payload), this represents the difference between the Mass in Running Order (MRO) and the Maximum Technically Permissible Laden Mass (MTPLM). It shows the maximum weight which can be loaded into your motorhome, covering items such as food, crockery, cutlery, clothing, bedding, gas cylinders, etc. See Technical Specification for actual figure.

Please take care to ensure that you have allowed for the masses of all items you intend to carry in the motorhome, e.g.. passengers, optional equipment, essential habitation equipment and personal effects such as clothing, food, pets, bicycles etc.

Although there are additional seat belts within the motorhome, please refer to the stated number of passengers that are allowed due to the MRO and MTPLM.

## LOADING AND DISTRIBUTION OF WEIGHT IN THE MOTORHOME



### Loading

Correct weight distribution is a major factor in making your motorhome a balanced and pleasant vehicle to drive without compromising road-holding. Care should therefore be taken to ensure that heavy items are well spaced and are in as low a position as possible, for example, low cupboards and bed boxes.

**DO NOT EXCEED THE STATED MAXIMUM LOAD. ITEMS FITTED OTHER THAN STANDARD EQUIPMENT WILL DEplete THE PAYLOAD STATED IN THIS HANDBOOK.**

**WARNING: Under no circumstances should the maximum permissible laden mass of the motorhome be exceeded.**

### Roof Loading

**DO NOT ALLOW CHILDREN TO CLIMB ONTO THE ROOF.**

### Roof Rack Bars and Ladder (optional)

When using the optional roof rack, care should be taken to see that all the items are securely anchored. Apart from general cleaning and polishing, the roof rack and ladder require no special maintenance.

**WARNING: Take special care when on the roof in wet or frosty weather conditions, which cause it to be particularly slippery.**

Maximum load within the area encompassed



by the roof rack should not exceed 75 kgs (165 lbs) with a maximum loading of 8 kg (17 lbs) per square foot.

## Before Moving Off

Whenever making a journey with your motorhome, either setting off on holiday or returning home, it is good practice to run through this simple checklist.

1. Close and secure all cupboards and drawers and check any loose articles. Do not store tins, bottles, etc. in overhead lockers.
2. Close and secure all windows and roof lights.
3. Leave all curtains and blinds open to aid visibility.
4. Check that gas cylinders are securely fastened and turn off all gas appliances, except those heating appliances designed to function while the vehicle is in motion. Also, ensure that the gas locker door is securely fastened.
5. Ensure that there is sufficient gas to meet your needs.
6. Switch off 230 volt supply at source, disconnect mains cable and store in an appropriate place.
7. Check your RCD's/MCB's for operation.
8. Check and if necessary, charge the conversion battery.
9. Check battery selection switch is in the OFF position.
10. Check that the battery is secure and that the battery box lid is fastened.
11. Ensure the fridge is on 12V operation and door lock is set. (**Note:** the electrical relays will allow the fridge to be run on the vehicle battery when the engine is running.)
12. Remove any external fresh water connections etc.
13. Make sure any heavy articles are stored in accordance with the loading procedure. Tables should also be made secure.
14. Lock the motorhome exterior door (remember to take out your keys).
15. Check your external rear view mirrors and adjust if necessary.
16. Check that all corner steadies are wound up and that, if a step is used, it is put away before moving off.
17. Check wheel nuts are secure and tyre pressures are correct.
18. Ensure, if required, that your fresh water tank is full and your waste tank is empty.
19. Referring to your base vehicle manual, check all fluid levels including automotive fuel and tyre pressures. Remember to check that your spare tyre is of the recommended pressure.
20. Ensure that, on models fitted with an elevating roof, the roof is securely locked down with the exterior catches applied.
21. The fridge vent covers should be fitted when the vehicle is to be driven in order to comply with European Type Approval regulations for vehicle external projections.
22. Ensure that the toilet flush tank only contains a small amount of water (1-2 litres) in order to minimise the risk of leaks or spillage whilst the vehicle is in motion.



## Pulling Off

Engage the clutch smoothly.

Avoid wear and tear on clutch and transmission by taking extra care.

Change gears smoothly.

Try not to jerk the clutch.

## MOTORWAY DRIVING

### Speed Limits (UK)

If a speed limit is not in force, your motorhome can be driven up to 70mph on motorways and dual carriageways.

1. Reduce Speed:
  - i) In high or cross winds.
  - ii) Downhill.
  - iii) In poor visibility.
2. High sided vehicles cause air buffeting, so extra care must be taken when passing or being passed. As much space as possible should be given.

### Motorway Handling

Do not bump the kerb with the wheels.

When passing other vehicles allow more than the normal clearance.

Allow longer to get up speed to pass.

Do not swing out suddenly.

Carry out all manoeuvres as smoothly as possible.

Use nearside wing mirror to check motorhome has cleared when overtaking.

### Changing a Wheel

Refer to the vehicle handbook

**WARNING: Ensure the wheel is of the same construction and size as the one that has been removed.**

### Jacking

Front and Rear - use the standard jacking points as per the base vehicle handbook.

## Removing the Spare Wheel

**CAUTION: Exercise care when lowering the wheel frame due to its weight.**

### Removal

- a. The spare is located in front of the rear step.
- b. Tools - The jack, handle and wheel brace are stored under the nearside rear seat.
- c. Follow the procedure for changing a wheel as described and illustrated in the base vehicle handbook.

## Replacement of Spare Wheel

Follow the procedure as described in the base vehicle handbook.

### Caravan Door Step

Your vehicle is fitted with an electrically operated side step. In the event of the step being left extended a buzzer, positioned under the dashboard, will sound (when the ignition is switched on) and the step will self-retract.

### Cycle Rack

In the event of a cycle rack being fitted, the cycle rack when folded will increase the vehicle length by 400mm. Your Auto-Sleeper dealer will give further advice or assistance if required.

### Whilst Driving

Whilst the vehicle is being driven ensure that:

- Both the passenger and driver wear seat belts - this is a legal requirement.
- Heavy loads are not stored in top cupboards or in areas from which they may become detached. Please ensure that heavy items are stored low down and take care not to overload individual wheels, the axles or the MTPLM.
- Table(s) are stowed in the correct position and table legs secured in their retaining clips.
- Furniture lids are lowered; cupboards and flaps are closed and secured.
- The refrigerator door is closed and secured by its travelling catch.



- The retractable rear step if fitted, is folded away or, if a separate step is supplied, it is safely stowed in the vehicle.
- Roof ventilators are closed and locked in the down position.
- The bathroom is not used whilst the vehicle is in motion. (Note: Refers only to models fitted with shower or toilet compartment).
- Top hinged windows are closed, and securely fastened.
- Children do not roam around the vehicle; they may fall and injure themselves.

## **Front Seat Swivel (where fitted)**

Your vehicle may be fitted with a swivel base to either or both of the front seats, so that they may be turned to face the rear of the vehicle.

In order to release the swivel mechanism to allow the seat to rotate, grasp the release lever at the front of the seat and pull upwards. The lever is located on the right front corner of the passenger seat and the left corner of the driver's seat. (Note that the lever on the opposite front corner of each seat operates the back reclining mechanism. Only operate this lever whilst sat in the seat, in order to avoid sudden uncontrolled movement of the backrest).

**WARNING: It is important that while the vehicle is in motion, any seat swivels are locked in the forward facing position.**

## **Map Storage**

In the rear of each cab seat there is a map pocket for storage of maps, periodicals and light items.



### **CHECK SITE REGULATIONS**

#### **Siting your Motorhome**

When siting your motorhome, keep to the roadways unless otherwise directed. Obey the speed limit which, in general, is 10 mph. Only a person in possession of a current driving licence is permitted to drive on the site. Stopping distances on grass are considerably greater than on tarmac.

#### **Selecting a Pitch**

Carefully select where you wish to park your motorhome. The site should be as level as possible, well drained and away from boggy areas and, preferably, not under or near trees. Consider also, how you will move your motorhome when leaving the site. For example, on sloping ground in wet conditions, pitch facing downhill.

#### **Levelling**

It is important to site your motorhome level to ensure correct operation of the refrigeration, cooker, etc.

#### **Awning Light**

The exterior awning light may be controlled from key fob or the control panel.







## SAFETY

**Important:** Your attention is drawn to the notice affixed in the motorhome advising on fire prevention, ventilation and what to do in case of fire.

### Children

Do not leave children alone in the motorhome in any event, keep potentially dangerous items out of reach as at home. e.g. matches, drugs, etc.

**WARNING: When upper bunks are used by children especially under six years of age care shall be taken against the risk of them falling out.**

### Fire Extinguishers

It is recommended that a 1 kg (2lb) minimum capacity dry powder fire extinguisher be located by the main exit door at all times.

A pan fire should not have an extinguisher aimed at it but be smothered with a fire blanket (which should be stored by the cooker).

### In case of fire

1. Get everyone out of the motorhome as quickly as possible using whichever exit is the quickest including windows. Do not stop to collect any personal items.
2. Raise the alarm — Call the fire brigade.
3. Turn off gas container valve if safe to do so.

### Ventilation and Condensation

The ventilation points on your motorhome are fixed points of ventilation which are stated by the European Standards. Under no circumstances must these vents be blocked or obstructed. It is advised that fixed ventilation points and any protective screens are checked and cleaned (if necessary) on a regular basis.

Fresh air circulation should be allowed below the motorhome when appliances are in use and when flues terminate below the floor to allow free evacuation of the products of combustion. At least three sides of the underfloor space should always be kept open and unobstructed especially by snow. Do not

make any additional openings in the floor.

**Under no circumstances must these vents be blocked or obstructed.**

Additional night time ventilation is obtained by releasing the window catches and placing them in the second groove on the frame catch.

### Awnings

There is no danger of pollution of an enclosed awning space by the LPG exhaust from the refrigerator venting into it.

**WARNING: Space heaters may produce sufficient exhaust gases to pollute the awning space if it is totally enclosed (from a general comfort, smell, and hygiene point of view). In the extreme case, there could be a build up of carbon dioxide to a dangerous level.**

**Note:** Motorhome owners are advised to allow some fresh air circulation into the awning space when such appliances are in use.



## ELECTRICAL SYSTEMS

### Batteries

Battery terminals and connectors should be firmly attached. Battery surfaces should be free of moisture and dirt.

Where removable cell taps are fitted these must be screwed firmly home.

When removing a battery always remove the negative cable first. On re-connection the negative cable should be connected last. Switch off all lamps and appliances before disconnecting the battery. Do not smoke while working on or near to the battery.

### Fuses

Always replace blown fuses with one of a correct rating.

### Overload

Never overload any electrical circuit, especially the 12-volt socket outlet. The rating of appliances should be checked before connection.

### Shower Compartment Light

Ensure that water does not ingress into the light unit.

### Charger Unit

Keep the charger unit well ventilated and never allow material or bags to be in contact with the unit casing which gets hot when the unit is operating.

### 230 Volt Mains Operation

Before connecting to the supply, ensure that the contacts in both the plug and the socket are clean and dry and that the hook-up plug is firmly located and locked into the socket. The RCD must be easily accessible at all times.

## GENERAL

Before using your Auto-Sleeper, you should be fully conversant with the following safety precautions; if you are in any doubt as to the meaning of any of them you should contact your supplying Auto-Sleeper dealer. Please read the following carefully.

In the interests of safety, replacement parts

for appliances should conform to the appliance manufacturer's specification and should be fitted by them or their authorised agent.

### WARNINGS:

- 1 Never use portable cooking or heating equipment, other than electric heaters that are not of the direct radiant type, as it is a fire and asphyxiation hazard.**
- 2 Do not use cookers as heaters or dry clothes etc on the cooker or space heater.**
- 3 Make sure that combustible materials can not come into contact with hot surfaces or burners.**
- 4 Surfaces of appliances may become hot in use and the guard provided does not give full protection to the young and elderly.**
- 5 Do not use additional independent gas appliances inside the vehicle.**
- 6 Never allow modifications of electrical or LPG systems or appliances except by qualified technicians.**

The water heater fitted to this vehicle is of the "room sealed" type, any replacement should be the same, i.e. "room sealed".

Turn off all gas equipment and cylinders/tanks and any other heating appliances before travelling.

Ventilation openings are located below all the gas appliances, and in the base of the gas locker. In winter conditions make sure the vents are clear of snow and mud. These openings should be regularly checked and any mesh covering them cleaned with a stiff brush to prevent any risk of them becoming blocked. The openings are provided for your safety - please do not obstruct them.

### Air Bags

Do not fit rear-facing children's seats to front facing seat protected by air bags. It is recommended that small children do not sit in the front passenger seat whilst the vehicle is in motion. Follow the advice given in your base vehicle instruction book.



## Smoke Alarm

### Features

- Battery operated.
- Operating light (LED) flashes approximately every 45 seconds confirming unit is powered.
- Low battery warning. Unit “beeps” approximately every 45 seconds for up to 30 days when the battery needs replacing.
- Sensitivity test button. Tests sensitivity, circuitry, battery, horn (and emergency light, model 350 only).
- Loud 85 decibel Piezo electric alarm. Automatically resets when hazardous condition has passed.

**WARNING: Test smoke alarm operation after vehicle has been in storage, before each trip and at least once per week during use.**

Your alarm requires one 9 volt battery. Under normal use, the battery should last approximately one year.

### Simple maintenance

Vacuum every six months to help keep the unit working efficiently. Open cover and gently vacuum interior of detector. Keep vacuum nozzle from touching the unit.

Problems are indicated by two events:

1. The alarm does not sound upon pressing the test button.
2. The operating light remains steadily on or off (i.e. does not flash approximately once every 45 seconds, when the unit is not in alarm).

*Try the following:*

1. Inspect for obvious damage.
2. Visually check that unit contains recommended battery type.
3. Check that battery is properly connected.
4. Gently vacuum as recommended above.
5. Replace battery.

If these procedures do not correct the problem, do NOT attempt repairs. Contact the manufacturer.

## SECURITY

### **Chassis number**

Record the chassis number and the factory job number of your motorhome, and keep them in a safe place at home.

The chassis number is a 17 digit number, beginning with the letters VF3, and is found stamped on a plate visible through a window in the bottom left hand corner of the windscreen, and also on a plate under the bonnet attached to the bonnet closing crossmember. (This plate also contains the permissible weight data).

The factory job number is an alphanumeric code consisting of a letter followed by four numbers, and is found on a label inside the glove box.

### **Motorhome Theft**

The theft of a motorhome can occur in the most unlikely circumstances; from a motorway service area, even from an owner's driveway.

Secure all windows and doors when your motorhome is unoccupied even if only for a short length of time.

### **Additional security**

Consider fitting any device which might deter or prevent intrusion by thieves. A wheel lock prevents removal of the wheel.

Window etching of the chassis number is a cost effective deterrent.

### **Free crime prevention**

Advice about securing your motorhome, protecting your valuables, property marking, either at home or whilst on site, can be obtained from the Crime Prevention Officer through your local Police Station.





Please read and become familiar with operating instructions for equipment fitted in your motorhome.

Connection of services are dealt with under separate headings, Water, Electricity and Gas.

## WATER SYSTEMS

### Fresh/Waste Tanks

The fresh and waste water tanks are located under the floor near the middle of the vehicle. The drain taps for both tanks are clipped to the underside of the vehicle on the offside, with the waste drain being nearer to the rear of the vehicle.

For capacities of both see the Technical Specification Section.

The fresh water tank is filled through the lockable cap on the exterior of the vehicle. All pipe work is manufactured to food grade material specification.

### Breathers

Both tanks are fitted with breathers, which allow air displacement when filling. When filling the fresh water tank, water may escape through these breathers; this should give no cause for concern.

### Frost Precaution

If the vehicle is not being used during freezing conditions the water must be drained. Whilst the vehicle is being used in such conditions, and the water heater is at risk of freezing, it should be drained by opening the drain valve.

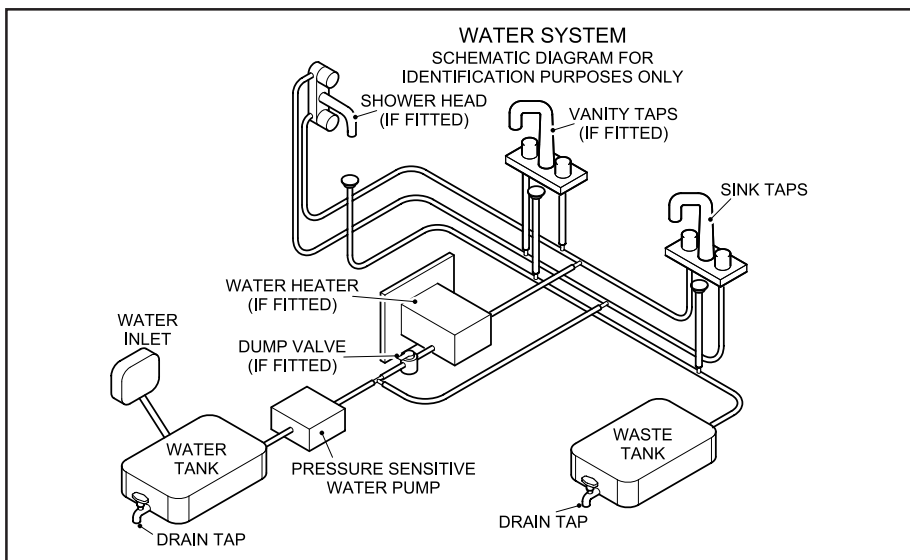
### FRESH WATER PUMP

A Flojet R3426-500 Triplex Diaphragm automatic water system pump is fitted under the offside settee adjacent to the combi heater unit. This is a self priming pump, mounted on noise absorbing mounts, which has the ability to run dry without damage. It has a flow rate of 5.3 litres (1.4 gallons) per minute.

### Operation

With pump switch off and battery fully charged, fill water tank, open all taps, then turn pump switch on. Water will begin to flow. When the water is free of air, turn taps off. Remember, you are filling the water heater and the toilet and shower lines. When all valves are shut-off, pump will stop.

**Caution:** Should pump fail to stop, turn switch off and see the trouble shooting guide.





## Sanitising

Portable water systems require periodic maintenance to deliver a consistent flow of freshwater. Depending on use and the environment the system is subject to, sanitising is recommended prior to storing and before using the water system after a period of storage.

Systems with new components, or ones that have been subjected to contamination, should also be disinfected as follows:

1. Use of the following methods to determine the amount of common household bleach needed to sanitise the tank.  
(A) Multiply "gallon of tank capacity" by 0.13; the result is the ounces of bleach needed to sanitise the tank.  
(B) Multiply "litres of tank capacity" by 1.0; the result is the milli-litres of bleach needed to sanitise the tank.
2. Mix into solution the proper amount of bleach within a container of water.
3. Pour the solution (water/bleach) into the tank and fill the tank with potable water.
4. Open ALL taps (hot and cold) allowing the water to run until the distinct odour of chlorine is detected.
5. The standard solution must have four (4) hours of contact time to disinfect completely. Doubling the solution concentration allows for contact time of one hour.
6. When the contact time is completed, drain the tank. Refill with potable water and purge the plumbing of all sanitising solution.

## Winterising

Allowing water to freeze in the system may result in damage to the pump and plumbing system.

Non-toxic anti-freeze for potable water may be used with Flojet pumps. Follow manufacturers recommendations.

Refer to coach or equipment manufacturers instructions for their specific winterising and drainage procedures.

**WARNING: Do not use automotive anti-freeze to winterise potable water systems. These solutions are highly toxic and may cause serious injury or death if ingested.**

1. Drain the water tank. Open tank drain valve. You may use the pump to drain the tank by opening all the taps in the system. Allow the pump to operate until the tank is empty. Do not operate the pump more than 15 minutes continuously.
2. Open all taps and purge the water from the plumbing system. Turn power to the pump off. Be sure that all the water from the drain lines are drained.
3. Remove quick connect inlet and outlet fittings from the pump and turn the pump on to pump out remaining water from the pump head. Be sure to have a catch pan or a rag under the pump to prevent water from spilling onto the RV. Turn the pump off once the plumbing is empty. Leave the fittings disconnected from the pump until the system is ready to be used again. Make a note on your tank filler that the plumbing is not connected.
4. Be sure that all taps are left open to protect against damage to the plumbing.



## Troubleshooting

Vibration induced by road conditions can cause plumbing to loosen. Check for any system components that are loose. Many symptoms can be resolved by simply tightening the hardware.

### **Failure to prime - motor operates, but no pump discharge - check:**

- Restricted intake or discharge line.
- Air leak in intake line.
- Debris in pump.
- Punctured pump diaphragm (pump leaks).
- Crack in pump housing.

### **Motor fails to turn on - check:**

- Loose wiring connection.
- Pump circuit has no power.
- Blown fuse.
- Pressure switch failure.
- Defective motor.

### **Pulsating flow - check:**

- Restricted pump delivery. Check discharge lines, fittings and valves for clogging or undersizing.

### **Pump fails to turn off after all fixtures are closed - check:**

- Empty water tank.
- Insufficient voltage to pump (low battery).
- Punctured pump diaphragm (pump leaks).
- Discharge line leak.
- Defective pressure switch.

### **Low flow and pressure - check:**

- Air leak at pump intake.
- Accumulation of debris inside pump and plumbing.
- Worn pump bearing (excessive noise).
- Punctured pump diaphragm (pump leaks).
- Defective motor.

## GAS

### GENERAL INFORMATION

The gas appliances in this vehicle are powered by Liquefied Petroleum Gas (LPG) which is stored, under pressure, in a tank located under the floor in the centre of the vehicle. This tank is refilled, when required, at a re-fuelling station using a nozzle and hose in a similar way to refilling the engine fuel tank. Make sure that heating and cooking appliances are switched off before you move the motorhome.

### The regulator

Your motorhome is fitted with a regulator as standard equipment. The gas regulator has a working pressure of 30mbar and is suitable for use with all commercially available brands of LPG. It is fitted adjacent to the tank installation under the vehicle and requires no attention from the owner whilst using the vehicle.

### Availability

LPG is becoming more widely available as more vehicle engines are converted to run on it. Many garages now have an LPG pump and other outlets are available in more rural areas, often near farming communities for

instance. Look for signs advertising 'Autogas'.

If you have internet access, search for 'LPG filling stations' and there are many sites where input of your postcode will locate the nearest filling station to your location.

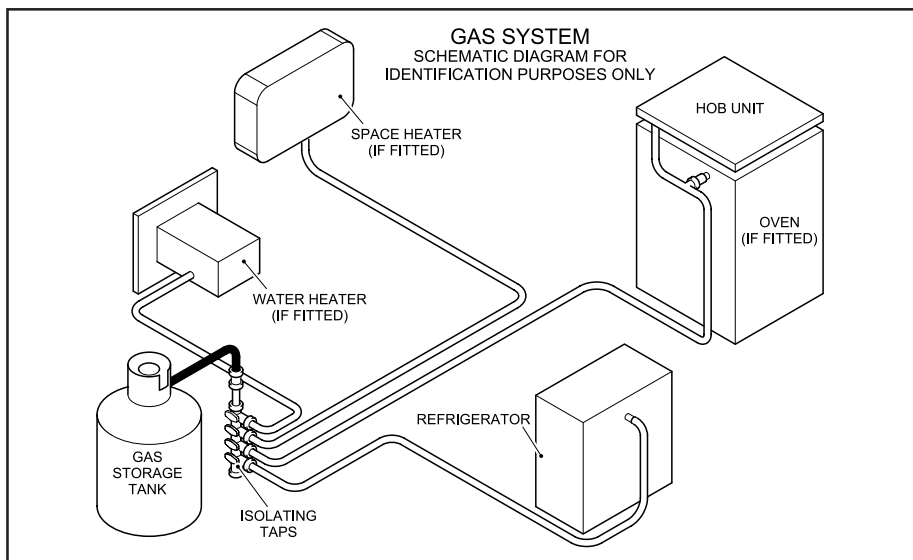
There are many companies producing LPG but all brands are suitable for use in your vehicle.

### LPG Re-fuelling

LPG re-fuelling is simple and efficient, carried out in much the same way as petrol and diesel with a hose and nozzle designed to lock onto the filling connector on the vehicle. The refuelling point is located behind a black plastic cover on the nearside of the vehicle behind the side door.

Once the connection is made, the customer simply presses and holds down a button on the dispenser until they have put the required amount of fuel into the vehicle or until the tank is full.

LPG tanks are fitted with a valve that stops the flow once the tank has reached its maximum safe filling level. Once the meter stops the customer simply disconnects the nozzle and returns it to the dispenser.

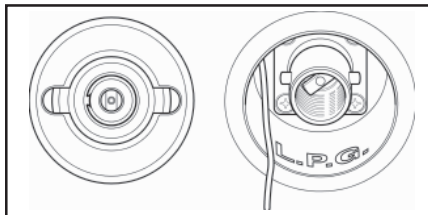




## Safety Note

- When pulling up to the Autogas dispenser ensure the vehicle is parked with the filling connector located nearest to the dispensing pump.
- Apply the handbrake and switch off the engine.
- No smoking, naked flames or mobile phones are allowed on the Service Station forecourt.
- The use of an adaptor is not recommended.
- Refilling of portable LPG cylinders is not allowed.
- All dispensing nozzles should be fitted with a nozzle shield. Please report to staff if missing.

## Filling Nozzles

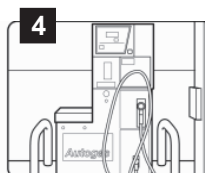
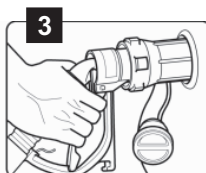
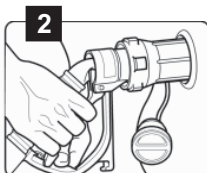
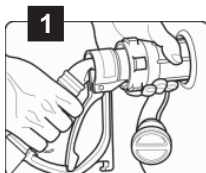


When connecting the nozzle to the filler valve on your vehicle always check that the locking pins are aligned.

There are two main types of filling nozzles used in the UK - 'Gas Guard' and 'De Visser'. Gas Guard uses a rotating barrel to lock on to the filler valve whereas De Visser uses a lever.

## 1 - Gas Guard nozzle filling instructions

Ensure Gas Guard nozzles are fitted with protective nozzle shields. Report to site staff if missing. (Nozzle shields have been removed from picture for clarity).



### Connecting

**(1)** Push nozzle over the lugs on the filler valve and turn barrel a quarter turn clockwise to lock. Do not squeeze lever before nozzle is connected.

**Caution:** From this moment onwards ensure hands are away from the nozzle barrel.

**(2)** Pull back lever and latch into place. Ensure lever is latched securely. Follow instructions on dispenser to commence dispensing.

### Disconnect

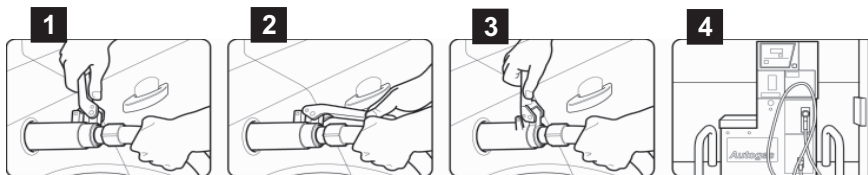
**(3)** Ensure hands are away from the nozzle barrel.

**Caution:** When dispensing has ended, squeeze back lever and release latch. Release lever fully. A small release of gas will occur as you release the lever. This is normal! Do not place hands on barrel until after the gas has been released.

**(4)** Turn barrel anti-clockwise a quarter turn to release nozzle from vehicle. Replace nozzle in holder on dispenser.

## 1 - De Visser nozzle filling instructions

Ensure De Visser nozzles are fitted with protective nozzle shields. Report to site staff if missing. (Nozzle shields have been removed from picture for clarity).



### Connecting

**(1)** Hold the hose behind the nozzle and the guard, keeping lever pushed forward with the handle at 12 o'clock position. Locate the nozzle over the lugs on the filler valve and turn the lever a quarter turn clockwise to lock.

**Caution:** From this moment onwards ensure hands are away from the nozzle barrel.

**(2)** Pull back lever towards hose and latch into place. Ensure lever is latched securely. Follow instructions on dispenser to commence dispensing.

### Disconnect

**(3)** Ensure hands are away from the nozzle barrel.

Hold hose behind guard and release lever by pushing forward. A small release of gas will occur as you release the lever. This is normal!

**(4)** Turn lever anti clockwise a quarter turn to release nozzle from vehicle. Replace nozzle in holder on dispenser.

## GAS SAFETY ADVICE

### Facts about LPG

- LPG is not poisonous.
- LPG has been given a smell by manufacturers in order to identify leaks.
- Bi-products of combustion are harmless.
- There is danger if all air and oxygen are excluded, therefore ventilation holes must be kept clear at all times.

### PRECAUTIONS

- Never look for a leak with a match. Always use a soap solution or its equivalent when testing connections. Do not operate any electrical apparatus whatsoever, especially light switches. If the leak is not obvious, the vehicle should be evacuated and qualified personnel consulted.
- Avoid naked lights when re-fuelling.
- LPG is more dense than air. Consequently any vapour may flow along the ground and into drains, sinking to the lowest level of the surroundings and be ignited at a considerable distance from the source of leakage. In still air the vapour will disperse slowly.

## VENTILATION

### General

Fixed ventilation is a statutory requirement in all motorhomes. These ventilation apertures are positioned at both high and low level and for your safety should not be obstructed, even partially.

### Low Level Ventilation

Under each appliance is a fixed ventilation aperture, of a size commensurate with the rating of the appliance itself. It is either gauze covered or incorporates a fixed plastic vent. This should be checked regularly to see that it has not become blocked.

### High Level Ventilation

High level ventilation is provided by the roof vents. The ventilation provided has been carefully calculated and relates to the rating of the appliances in the vehicle. Roof vents must not be covered with anything that may limit or affect the ventilation they provide.

### Maintenance

Under no circumstances should any fixed ventilation aperture be blocked, covered, either partially or fully, or be modified in any manner whatsoever. They should be checked at least annually for damage or blockage.

Screens and/or grilles should be kept clean and free from dust. See diagram of upper/lower ventilation.

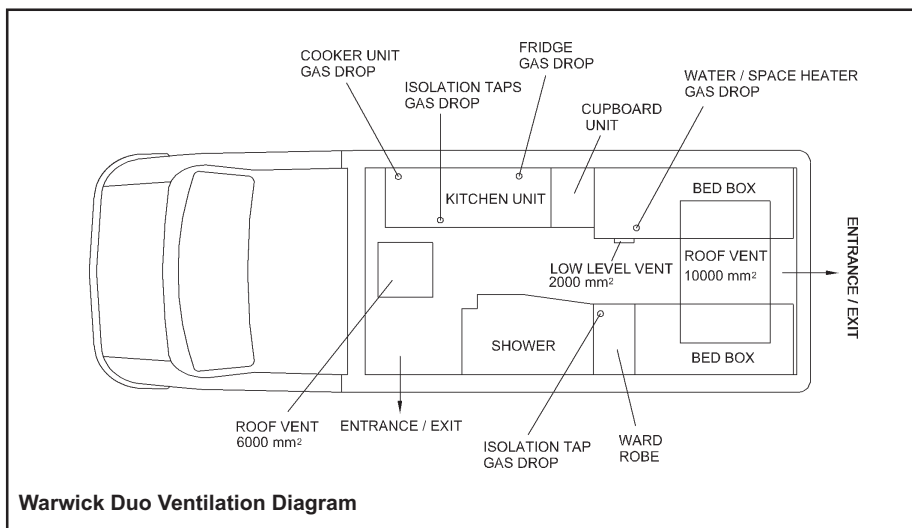
All ventilation complies with BS EN 721 and vents should not be obstructed in any manner as this could lead to insufficient fresh air. In this case the confined atmosphere becomes depleted of oxygen which leads to the formation of the highly poisonous gas 'carbon monoxide'. Carbon Monoxide is odourless, colourless and tasteless and will rapidly cause unconsciousness and death with little or no warning prior to collapse. **THERE IS NO DANGER WHEN ADEQUATE VENTILATION IS PROVIDED.**

When you are cooking, it is essential to provide additional ventilation such as opening windows near grill, cooker or oven.

### Roof-mounted Flue installations

All flue installations should be inspected once a year throughout their length for corrosion. Flues should be replaced if any sign of perforation is found. Ensure that the replacement is of an approved type.

**WARNING: Never allow modification of LPG systems and appliances except by qualified persons.**





## Connection

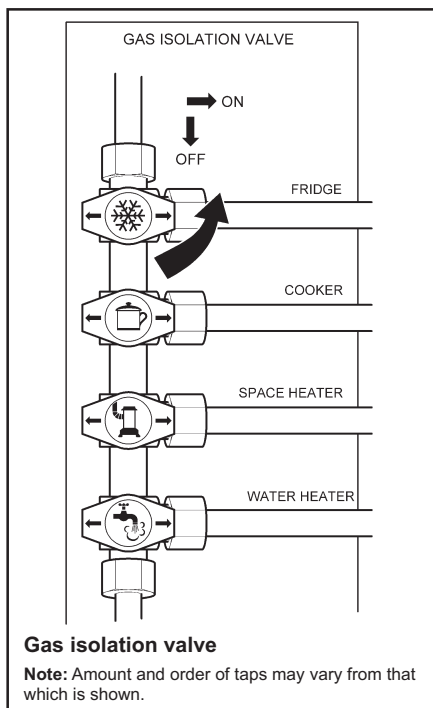
Before turning on the gas supply, ensure that all gas operated equipment in the motorhome is turned off.

All gas equipment is supplied through a central Gas Manifold System which has individual isolation taps for each appliance denoted by a symbol (see below).

### WARNINGS:

- 1 Interior outlet sockets must only be used with original appliances supplied by manufacturer.**
- 2 No appliance must be used outside when connected to an internal socket.**
- 3 No additional appliance must be used inside the motorhome.**

Never use portable cooking or heating equipment other than electric heaters, that are not of the radiant type as they are a fire and asphyxiation hazard.



## Safe Usage

To avoid accidents, the following fundamental advice should be carefully read before using gas appliances.

- Always read and follow the use and maintenance instructions provided by the manufacturers of gas equipment. Should any soot accumulate on pans, fire radiants, etc., or any smell be produced, consult a competent installer on the correct maintenance and adjustment of burners.
- Never check for gas leaks with a naked flame.
- Never use gas appliances without adequate ventilation. All gas appliances require a plentiful supply of fresh air for correct operation. Fixed ventilators or air inlets should not be stopped up. Where practicable, turn off all appliances before retiring to bed, preferably at the cylinder or inlet to the motorhome or other dwelling.
- Unless the appliance incorporates automatic ignition, when lighting an appliance always make sure you apply a lighted match or taper to the burner before turning on the gas.
- If any appliance is disconnected for repair, maintenance, etc., ensure that the gas line is capped off.
- If taps are stiff to operate or appear to be a source of leakage, call in a competent installer to rectify. LPG taps require a special grease.
- Always seek advice when in doubt.

## Input Ratings

Input rating for the gas appliances are as follows:

Refrigerator .....	0.1kW
Heater .....	2.4kW
Grill .....	1.5kW
Water heater .....	1.5kW
Oven .....	1.5kW
Hob burners (x3) .....	1.5kW (each)

## ELECTRICITY

As with electricity in the home, care must be exercised when handling mains electricity.

Your attention is drawn to the following notice as laid down by the Institute of Electrical Engineers.

### INSTRUCTIONS FOR ELECTRICITY SUPPLY

#### On arrival at caravan site

The motorhome mains inlet flexible supply cable and its limits are shown on page 7-12.

1. Before connecting the motorhome installation to the mains supply, check that:
  - (a) the mains supply is suitable for your installation and appliances, i.e. whether it is a.c. or d.c. and whether it is at the correct voltage and frequency,
  - (b) your installation will be properly earthed. Never accept a supply from a socket outlet or plug having only two pins, or from a lighting outlet, and
  - (c) any residual current device (earth leakage circuit breaker) in the mains supply to the motorhome has been tested within the last month.

In case of doubt, consult the site owner or his agent.

#### 2. MAKE SURE THAT THE SWITCH AT THE SITE SUPPLY POINT IS OFF.

3. Lift the cover of the electricity inlet provided on the motorhome, and insert the connector of the supply flexible cable.
4. Remove any cover from the socket outlet provided at the site supply point, and connect the plug at the other end of the supply flexible cable to this. Switch on the main switch at the site supply point.

**Note:** Use mains cable fully uncoiled and protect from traffic.

**Caution:** Be aware that the 12V appliances, except the refrigerator, will not operate whilst the ignition is switched on and the vehicle engine running. The master switch on the electrical control panel controls the 12 volt supply.

**IT IS IMPORTANT THAT THE MAIN SWITCH AT THE SITE SUPPLY POINT SHOULD BE SWITCHED OFF, THE SUPPLY FLEXIBLE CABLE DISCONNECTED, AND ANY COVER REPLACED ON THE SOCKET OUTLET AT THE SITE SUPPLY POINT BEFORE DISCONNECTING THE FLEXIBLE CABLE FROM THE MOTORHOME. IT IS DANGEROUS TO LEAVE THE SUPPLY SOCKET OR SUPPLY FLEXIBLE CABLE LIVE.**

**Note:** Please check appliance manufacturers handbook to see if suitable for use with generator or charger.

A generator may only be connected via the mains socket. If using a generator you also need to comply with the requirements/instructions supplied with the generator.

Because motorhomes are sometimes left unused for long periods in the open, it is strongly advised that the mains installation is inspected periodically to ensure that it is safe to use. The IEE Wiring Regulations recommend that mains installations in motorhomes are re-inspected every 3 years by a qualified person (see list) who should sign and issue a periodic inspection report. (The manufacturer recommends annual inspections).

Suitably qualified persons acceptable to the NCC to sign and issue inspection and completion certificates are:

- an approved contractor of the National Inspection Council for Electrical Installation Contracting\* or
- a member of the Electrical Contractors' Association
- a member of the Electrical Contractors' Association of Scotland
- a qualified person acting on behalf of the above (in which event it should be stated for whom he is acting).



*\*The names and addresses of Approved Contractors in any locality (there are over 10,500 in the UK) can be obtained from Electricity Shops, or direct from:*

## NICEIC

Vintage House, 37 Albert Embankment,  
London SE1 7UJ  
Telephone: 0171 582 7746

*The names and addresses of members of the Electrical Contractors' Associations can be obtained direct from:*

## ECA

Esca House  
Palace Court  
London W2 4HY  
Telephone: 0171 229 1266

ECA of Scotland  
23 Heriot Row  
Edinburgh EH3 6EW

Telephone: 0131 225 7221

**WARNING: Current consumption in the motorhome must not exceed 16 amps or the pitch permitted maximum if this is less than 16 amps.**

**It is dangerous to attempt modifications and additions yourself. Never allow modification of electrical systems and appliances except by qualified persons. Lampholder-plugs (bayonet-cap adaptors) should not in any circumstances be used.**

**CAUTION:** The Truma Ultraheat has the potential to draw 8 amps at 2kW. It is, therefore, advisable to check the supply rating before switching on two loads (items) greater than the supply as this may cause an overload and the circuit breaker to trip.

## OVERSEAS CONNECTION

**Note:** Connection to a mains voltage supply OVERSEAS requires particular attention.

Care must be taken when connecting supplies abroad since the supplies can be of REVERSE POLARITY.

The significance of REVERSE POLARITY is that when equipment is switched off it may not be electrically isolated.

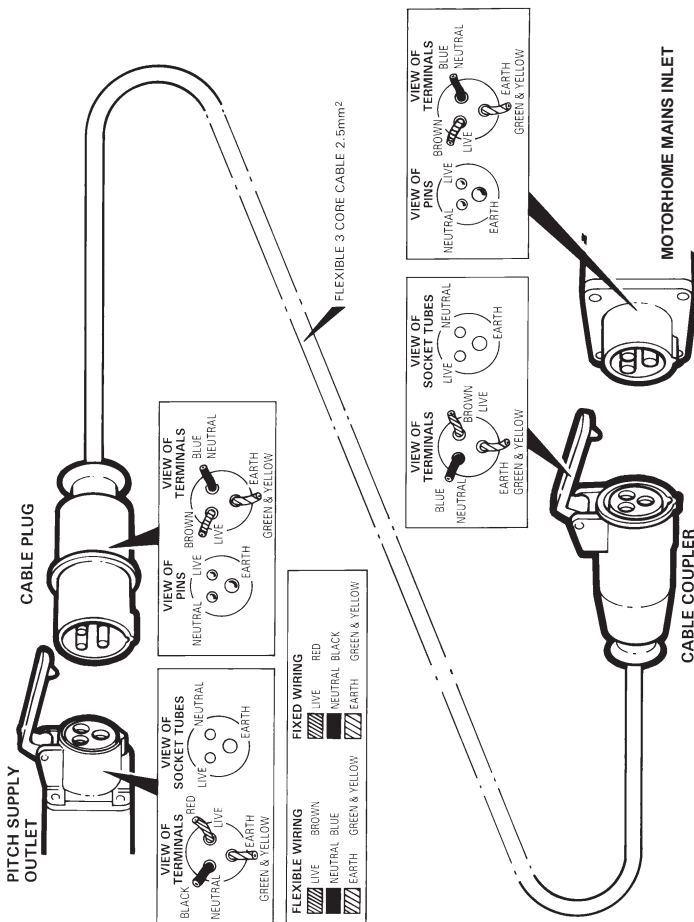
The only certain way of making equipment safe is to unplug it.

If electrical polarity indication is not included in your motorhome electrical equipment, it is useful to have a means of checking polarity of the mains supply, especially when touring overseas. There are available several proprietary makes of equipment for testing polarity.

If it can be achieved, it is preferable to connect live to live, and neutral to neutral to maintain full electrical protection.

**WARNING:** It is essential that connections are made exactly as shown. If terminal markings are not in accordance with the diagram they must be ignored. If in doubt consult a qualified electrician.

The legal length of the mains inlet cable is 25  $\pm$  2 metres. When in use it must be fully uncoiled and protected from traffic.



WIRING OF CONNECTING CABLE AND MOTORHOME MAINS INLET



## EC155 POWER CONTROL SYSTEM

### Key features

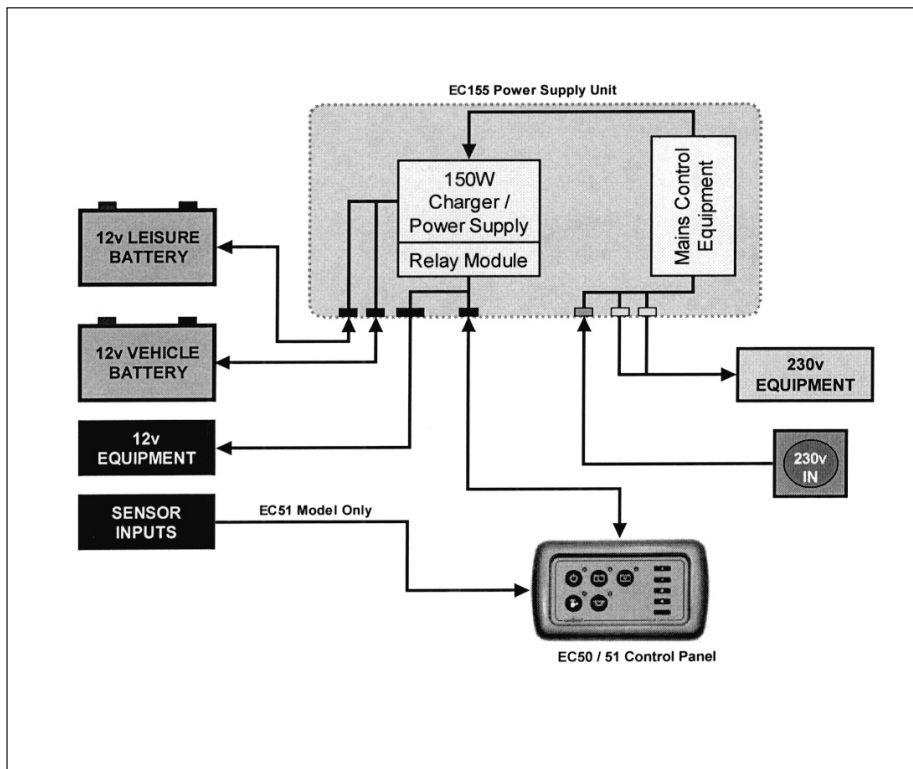
150W (~12A) combined Power Converter/ Battery Charger - Converts the 230v mains supply into 12V DC power to run the leisure equipment and charge the battery.

Low current switching voltage drop in the circuit and improved circuit fusing provides better protection for the harness and equipment.

Links to the EC50 series LED control panel to provide simple but intelligent control of the 12V equipment and built in over discharge software protects the leisure and vehicle batteries.

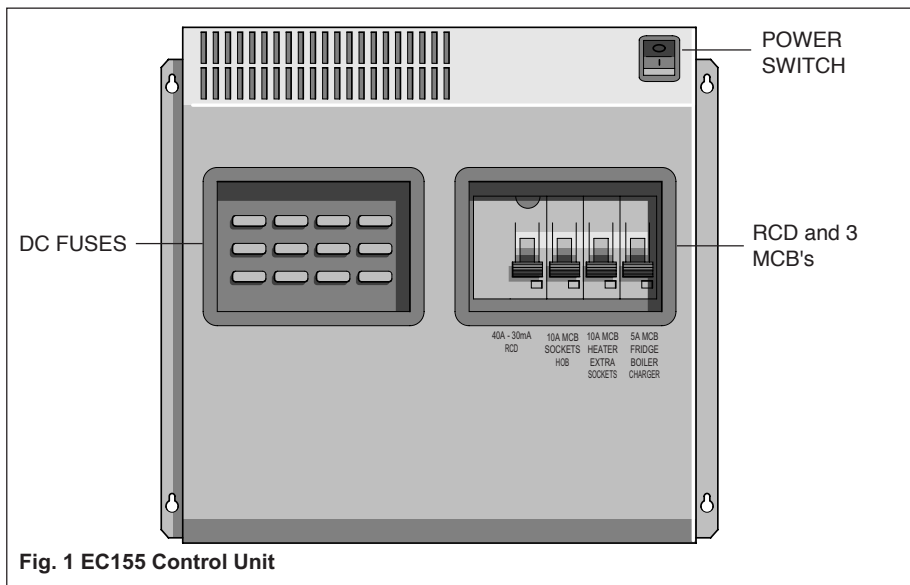
### System overview

The following diagram shows the typical configuration of the EC155 system. The key component is the EC155 power supply unit (PSU), which is the hub of the system and provides connectivity to the ancillary components and the EC50 series control panel.





## POWER DISTRIBUTION UNIT (EC155)



**Fig. 1 EC155 Control Unit**

### Power supply details

For the safe operation of all electrical equipment within your leisure vehicle it is important that you read and fully understand these instructions. If you are unsure of any point please contact your dealer/distributor for advice before use.

Fig. 1 shows the EC155 PSU layout.

### WARNING

**Under heavy loads the EC155 PSU case may become hot. ALWAYS ensure the ventilation slots and the cooling fan have a clear flow of air. Do not place combustible materials against/adjacent to the EC155 PSU. The PSU will shutdown if overheated and will restart automatically when cool.**

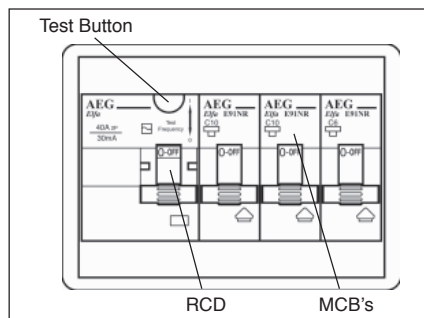
### Battery charger/power converter

The EC155 PSU incorporates a fixed voltage battery charger/power converter. The battery charger/power converter also powers the leisure equipment when the mains supply is connected. This module supplies 13.8V DC to the leisure equipment up to a maximum of

12 amps (155 watts), therefore the available power is distributed between the leisure load and the battery, with the leisure load taking priority as per the following example:

Leisure load	Available power for battery charging
3A	9 Amps
6A	6 Amps
9A	3 Amps
12A	0 Amps

### Residual Current Device and Miniature Circuit Breakers





The Residual Current Device (RCD) is basically provided to protect the user from lethal electric shock. The RCD will turn off (trip) if the current flowing in the live conductor does not fully return down the neutral conductor, i.e. some current is passing through a person down to earth or through a faulty appliance.

To ensure the RCD is working correctly, the test button should be operated each time the vehicle is connected to the mains supply (see page 7-20).

The Miniature Circuit Breakers (MCB's) operate in a similar way to traditional fuses and are provided to protect the wiring installation from overload or short circuit. If an overload occurs the MCB will switch off the supply. If this occurs you should investigate the cause of the fault before switching the MCB back on.

The following table shows the rating and circuit allocation for the three MCB's.

MCB	Rating
1	10 Amps
2	10 Amps
3	6 Amps

## Fuses

### WARNING

**When replacing fuses always replace a fuse with the correct value. NEVER replace with a higher value/rating as this could damage the wiring harness. If a replacement fuse 'blows' do not keep replacing the fuse as you could damage the wiring harness. Please investigate the fault and contact your dealer.**

The following table shows the fuse allocation for the 12 fuses fitted to the EC155 PSU.

### FUSE/MCB TABLE

Fuse	Rating
1	15 Amps
2	10 Amps
3	5 Amps
4	10 Amps
5	10 Amps
6	10 Amps
7	10 Amps
8	5 Amps
9	20 Amps
10	20 Amps
11	10 Amps
12	15 Amps
Battery	20 Amps



## BATTERY

### Type/Selection

For optimum performance and safety it is essential that only a proprietary brand 'leisure' battery is used with a typical capacity of 75 to 120 Ah (ampere/hours). A normal car battery is NOT suitable. This battery should always be connected when the system is in use.

The EC155 PSU is designed to charge standard lead acid 'leisure' batteries, however it may be used with Gel batteries depending on their composition. Please consult the battery documentation for further advice.

The battery feed is fitted with an inline fuse between the battery and the electrical harness, and is usually located immediately outside the battery compartment or within 500mm of the battery. The maximum rating of this fuse is 20A per battery.

### Installation & Removal

Always disconnect the 230V mains supply and turn the EC155 PSU charger switch to the OFF (0) position before removing or installing the battery.

When connecting the battery, ensure that the correct polarity is observed (black is negative [-] and red is positive [+]) and that the terminals are securely fastened. Crocodile clips must be used.

## WARNING

**Explosive gases may be present at the battery. Take care to prevent flames and sparks in the vicinity of the battery and do not smoke.**

### Operation/Servicing

Under normal circumstances it should not be necessary to remove the battery other than for routine inspection of the terminals and "topping up" of the battery fluid where applicable. Please see instructions supplied with the battery.

**Note:** Do not over-discharge the battery. One of the most common causes of battery failure is when the battery is discharged below the recommended level of approximately 10V.

Discharging a battery below this figure can cause permanent damage to one or more of the cells within the battery.

To prevent over discharge, the EC155 PSU in conjunction with the EC50 series control panel incorporates a battery protect circuit that warns and then disconnects the batteries when they fall below the following conditions:

Vehicle battery voltage cut off point: 10.9V.

Action after cut off: Battery selection is changed from vehicle battery to leisure battery. If the leisure battery is below 9V then a further warning will occur (see following).

Notes: This cut off level is designed to protect the vehicle battery from over discharge. The 10.9V level ensures there is sufficient power in the battery to run the vehicle electronics and start the vehicle. This cut off only applies to power drawn from the battery by the leisure equipment; it will not protect the battery if you leave the vehicle lights on.

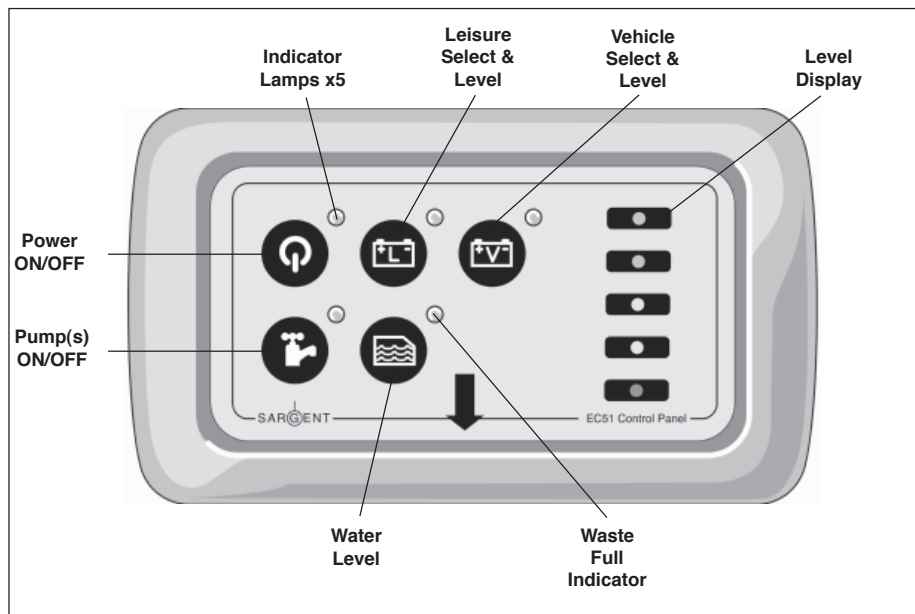
Leisure battery cut off point: 9V.

Action after cut off: Power is turned off.




Notes: This is an emergency cut off level to protect the battery from severe damage. You should not rely on this cut off level during normal operation, but manage your power consumption to a discharge level of 10V.

This cut off only applies to power drawn from the battery by the leisure equipment that is controlled by the control panel power switch; it will not protect the battery from discharge by the radio or other permanently connected equipment.





## EC51 CONTROL PANEL



## EC51 operation

Symbol	Function	Description
	Main 12V power switch	This switch turns on (or off) the 12-volt power. As the power is turned on the leisure battery is automatically selected and the LED display shows the battery voltage.
	Water pump power switch	This switch turns on the power to the internal water pump ready for use. It can be used to turn off the pump overnight to avoid any noise from the pump. When the switch is on, the LED will show green.
	Auxiliary power switch	This switch turns the Awning or Entry light on (or off). When the switch is on the LED will show green.

## EC51 operation (continued)

Symbol	Function	Description
	Select LEISURE battery and display battery voltage.	<p>This switch is used to selected the Leisure battery and to display the battery voltage level. Press once to select and display the voltage. This display will turn off automatically after two seconds.</p> <p>The LED next to the button will show that the battery has been selected.</p> <p>If the Leisure battery drops below 9V an alarm will trigger to warn you that the battery is low. This alarm lasts for one minute and then the power will be switched off to protect the battery.</p>
	Select VEHICLE battery and display battery voltage.	<p>This switch is used to select the Vehicle battery and to display the battery voltage level. Press once to select and display the voltage. This display will turn off automatically after two seconds.</p> <p>the LED next to the button will show that the battery has been selected.</p> <p>If the Vehicle battery drops below 10.9V an alarm will trigger to warn you that the battery is low. This alarm lasts for one minute and then the battery selection will automatically switch over to the Leisure battery to protect the vehicle battery.</p>
	Water Level test.	<p>This switch is used to display the fresh water level within the onboard water tank. Press once to select the Fresh tank and show the water level. The tank has five levels Empty, 1/4, 1/2, 3/4 and Full. This display will turn off automatically after two seconds.</p>
	Waste Full indicator.	<p>The LED adjacent to the water level button is used to show when the Waste Water Tank is full. The tank is full when the LED is illuminated.</p>



## System Disable

To meet EMC (Electro Magnetic Compatability) directive 89/336/EEC the EC50 series control panel will shutdown, and the electrical accessories within the vehicle will be disconnected while the vehicle is in motion. When the engine is stopped the control panel returns to standby mode ready to be turned on by the power button.

This does not apply to the fridge, which will continue to operate while the vehicle is in motion provided that 12V is selected on the fridge energy selection control.

## Bar Graph technical data

LED	Voltage reading	Water reading
5	13.5-14.4	100% full
4	12.5-13.5	75% full
3	11.5-12.5	50% full
2	10.5-11.5	25% full
1	<= 10.5	Less than 25%

## Operational and Safety Information

### Mains connection

For your safety it is IMPORTANT that you follow these connection instructions each time your Motorhome is connected to a mains supply.

#### 1. Ensure suitability of the Mains Supply.

Your Leisure Vehicle should only be connected to an approved supply that meets the requirement of BS7671. In most cases the site warden will hold information regarding suitability of supply. If using a generator you also need to comply with the requirements/instructions supplied with the generator.

#### 2. Switch the EC225 PSU internal Charger unit OFF.

Locate the red power switch on the EC155 and ensure the switch is in the OFF (0) position before connection to the mains supply.

#### 3. Connect the Hook-up Lead.

Firstly connect the supplied hook-up (orange cable with blue connectors) to the Leisure Vehicle and then connect to the mains supply.

#### 4. Check Residual Current Device operation.

Locate the RCD within the EC155 PSU and ensure the RCD is switched on (lever in up position). Press the 'TEST' button and confirm that the RCD is

turned off (lever in down position). Switch the RCD back to the on position (lever in up position). If the test button failed to operate the RCD see the TROUBLE SHOOTING section.

- 5. Check correct Polarity.** Locate the 'Reverse Polarity' indicator on the EC155 PSU and ensure that the indicator is NOT illuminated. If the indicator is illuminated see the TROUBLE SHOOTING section.
- 6. Check Miniature Circuit Breakers.** Locate the MCB's within the EC155 PSU (adjacent to the RCD) and ensure they are all in the ON (up) position. If any MCB's fail to latch in the on position see the TROUBLE SHOOTING section.
- 7. Turn the EC155 PSU ON.** Locate the red power switch on the EC155 PSU and turn to the ON (I) position. The switch will illuminate when turned on.
- 8. Check operation of equipment.** It is now safe to check the operation of the 12V and 230V equipment.

## Technical data

Input 230V: 230 Volts/0 to 12 Amps (+ / - 10%).

Output 230V: RCD protected, 3 x MCB outputs of 10, 10 and 6A via 2 x 9 way connectors.

Input12V: 2 x 20A battery inputs via a single 9 way connector.

Output 12V: 20A total output via 4 x 16A switched channels protected by 12 fused outputs via a 12 way connector.

Integrated Charger: Input 220-230 volts AC +/- 19%, Frequency 50 Hz +/- 6%, Current 3A max.

DC output 13.8 Volts nominal, Current 12 Amps (155 Watts).

Signal Input: 1 x Engine running via PSU connector (4 x Fresh water level, 1 x Waste water level on EC51 version).  
Fresh water negative sensed. Waste waster 5V sensed.

Data In/Out: Data communication and power to Control Panel via 8 way RJ45 connector.

IP rating: IP31.

Operating temperature: Ambient 0 to 35 deg Centigrade. PSU case temperature with full load 65 deg Max.

Automatic shutdown and restart if overheated/overloaded.

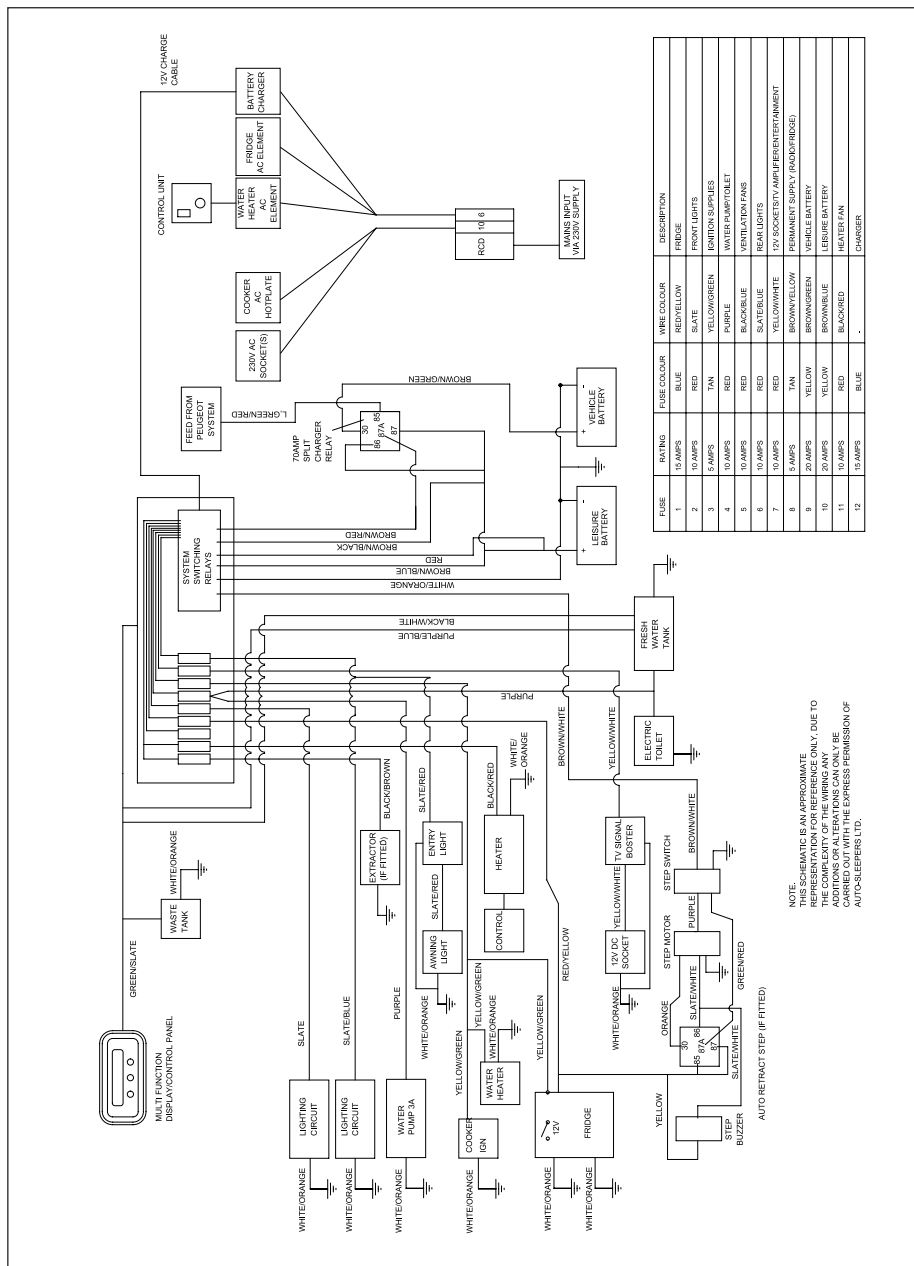


## COMMON FAULT TABLE

Fault	Possible Cause	Proposed Fix
<b>No 230 volt output from PSU.</b>	Connecting lead between the site and Leisure Vehicle not connected.	Check and connect lead as per page 7-18, note 3. Check also input connector at the base of the ED155 PSU.
	RCD switched off.	Reset RCD as per page 7-18, note 4.
	RCD not operating correctly.	Check supply polarity; if the RCD continues to fail contact your dealer, as there is probably an equipment or wiring fault.
	MCB switched off.	Reset MCB by switching OFF (down position) then back ON (up position), if the MCB continues to fail contact your dealer, as there is probably an equipment or wiring fault.
	No or deficient supply from site.	Contact site warden for assistance.
	Other fault.	Contact your dealer.
<b>Control Panel Problems.</b>	Control Panel has no display.	Check batteries and fuses, turn EC155 PSU charger switch on, and ensure mains supply is connected.
		Check control panel connecting lead at EC155 PSU and behind Control Panel.
		Contact your Dealer.
	12V Power turns off.	Battery save feature has operated to protect the vehicle battery and or the Leisure battery. See page 7-15.
		Engine has been started, all equipment has been disconnected to meet EMC requirements. See page 7-18.
		Observe control panel handling instructions.
	Control Panel display corrupt/erratic function.	Control panel software may have crashed. Reboot control panel by turning off the EC155 PSU charger switch and removing fuses 9 and 10 at the EC155 PSU (2x20A fuses for leisure and vehicle batteries). Wait 30 seconds then replace the fuses and turn the charger switch on. (Alternatively, remove the bezel at the control panel by pulling down in the centre at the bottom, unplug the control panel multi-way connector, wait 30 seconds, then plug back in and reassemble.
<b>No 12 volt output from PSU</b>	No 230V supply.	Check all above.
	Charger not switched on.	Switch charger switch on (I) position, switch will illuminate.
	Battery not connected and /or charged.	Install charged battery as per page 7-15.
	Power switch on control panel not switched to ON.	Turn power on at control panel.
	Battery flat/Battery fuse blown.	Recharge battery, check fuses, check voltage is present at battery.
	Fuse blown.	Check all fuses are intact and the correct value fuse is installed as per fuse table.
	Equipment switched off/unplugged.	Check equipment is switched on and connected to the 12V supply.
	PSU overheated/auto shutdown operated.	Reduce load on system. Allow PSU to cool down. PSU will automatically restart when cool. See page 7-13.
	Other fault.	Contact your dealer.
<b>Pump not working.</b>	Fuse blown.	Replace fuse.
	Pump turned off.	Turn pump on by pressing the pump button at the EC155 control panel (tap symbol).



## 12V/230V WIRING DIAGRAM







## TECHNICAL DATA

### Base Vehicle Data

For all matters relating to the base vehicle, and particularly tyre pressures, refer to the base vehicle instruction book or if in doubt consult your local base vehicle commercial dealer.

### Weights, Dimensions and Capacities

Before using your Auto-Sleeper you should be fully conversant with all matters relating to weights. The following definitions should be fully understood and then related to the tabulated base vehicle weight data.

### Weights

Details of vehicle weights are found below, and are presented in the manner prescribed in the European Standard EN1646-2 for Payloads. All weights are in kilograms (kg).

Take care to ensure that heavy loads are stored low down in bed boxes and low cupboards, and distribute weight evenly side to side as far as possible.

*Note 1:* Please take care to ensure that you have allowed for the masses of all items you intend to carry in the motor caravan, e.g. passengers, optional equipment, essential habitation equipment and personal effects such as clothing, food, pets, bicycles, sailboards, sports equipment, etc.

*Note 2:* Warning - Under no circumstances should the maximum technically permissible laden mass of this motor caravan, or its individual axles, be exceeded.

## DEFINITIONS

### Maximum Technically Permissible Laden Mass (MTPLM)

The Maximum Technically Permissible Laden Mass is a figure given by the manufacturer of the base vehicle. It is the combined maximum permitted weight of the vehicle and all of its contents, both inside and out. The MTPLM is unaffected by the Auto-Sleeper conversion.

### Mass in Running Order (MRO)

The Mass in Running Order is defined as the mass of the standard converted vehicle with bodywork including the following:

- Coolants (oil and water)
- 90% of automotive fuel
- Spare wheel
- Crockery
- Washer fluid
- Tools
- Driver (at 75 kg, 11st 12lb)
- Fire extinguisher

All other optional equipment whether on the base vehicle or part of the conversion is excluded from the mass in running order.

### Mass of the User Payload

The Mass of the User Payload is the difference between the MPTLM and the MRO. It is the motor caravans carrying capacity for everything placed in or on the vehicle, including the passengers. Please note that a driver (at 75kg, 11st 12lb) is included in the MRO. Everything listed in *italics* below must be subtracted from the payload.

### Mass of the Conventional Load

The Conventional Load is the mass of the passengers carried and must be subtracted from the payload. The "EC standard person" weighs 75kg (11st 12lb). The user should adjust the figure according to the mass and number of passengers carried. Motorhome Manufacturers designate passenger seats as being suitable for travelling, and provide seat belts accordingly. Multiplying the weight of the passengers by the number of passengers gives the Conventional Load. Please note that a driver (at 75kg, 11st 12lb) is included in the MRO.



## ***Essential Habitation Equipment***

For the purpose of EN1646-2, the mass of the Essential Habitation Equipment includes the mass of the following:

- the LPG cylinders, 90% full.
- the freshwater tank, 90% full.
- the water heater system, full.
- the waste water tank, empty.
- the toilet system flushing tank, full.
- the toilet system holding tank, empty.

All of these must be subtracted from the user payload.

Auto-Sleepers include the low voltage (230V) connection cable and the second battery in the mass in running order.

## ***Options, Personal Effects and Accessories***

When options, personal effects and accessories are fitted or carried the mass must be subtracted from the user payload. All optional equipment whether on the base vehicle or part of the conversion is excluded from the mass in running order. Personal effects are any items of any description carried by the vehicle.

To determine accurately if a vehicle is exceeding one of its maximum technically permissible laden masses, the vehicle with all of its load (that is passengers, contents, luggage and external load) should be weighed on a weighbridge.

You may wish to allocate the user payload to suit your own use. For example, to increase the available payload, the water system may be emptied. If the vehicle is not being used for camping the gas bottles can be left at home to increase the mass available for other items.

## **Gross Train Mass (GTM)**

If you are towing a trailer with your Auto-Sleeper, the Gross Train Weight is the maximum allowable weight of the towing vehicle, the trailer and the mass of every item carried. The GTM is given by the base vehicle manufacturer and is unaffected by the Auto-Sleeper conversion. Please check your driving licence to ensure you are allowed to drive a vehicle combination at this weight.

## **Maximum Braked Trailer Mass (MBTM)**

This is the maximum allowable weight of the trailer together with its load, provided the trailer has a braking system, which complies with the local Construction and Use Regulations. The MBTM is given by the base vehicle manufacturer and is unaffected by the Auto-Sleeper conversion.

## **MTPLM of the Axles**

The individual axles also have MTPLM's. The sum of the two axle MTPLM's usually exceeds the overall vehicle MTPLM, but this does not mean you can load each axle to its maximum, because doing so would exceed the overall MTPLM of the whole vehicle.



## WEIGHT AND DIMENSION DATA

### WEIGHT DATA TABLE

All weights in kg

<b>WARWICK DUO</b>	<b>2.2 Hdi</b>	<b>3.0 Hdi</b>
Vehicle Designation	335 L3	335 L3
MTPLM	3500	3500
Mass in Running Order	2865	2915
Mass of the User Payload	635	585
Conventional Load @ 75kg per person)	75	75
Designated Passenger Seats (excluding driver)	1	1
Essential Habitation Equipment	100	100
Personal Effects (standard minimum figure)	80	80
Remainder for Personal Effects / Options / Accessories	380	330
Awning	22	22
Cycle rack	9	9
Roof Rack + Ladder	10	10
Gross Train Mass	5500	6000
MBTM	2000	2500
<b>Axle Weights</b>		
Front, in Running Order	1615	1665
Rear, in Running Order	1250	1250
MTPLM Front	1850	1850
MTPLM Rear	2000	2000

**WEIGHT AND DIMENSION DATA (continued)****DIMENSIONAL DATA****All dimensions in mm****MODEL****Warwick Duo**

Base Vehicle Manufacturer	Peugeot
---------------------------	---------

Base Vehicle Model	335 L3
--------------------	--------

Wheelbase	4035
-----------	------

**METRIC DIMENSIONS**

Overall Length	5998
----------------	------

Overall Width (mirrors extended)	2508
----------------------------------	------

Overall Width (mirrors folded)	2260
--------------------------------	------

Overall Height	2600
----------------	------

Internal Height (maximum)	1900
---------------------------	------

Internal Height (minimum)	1900
---------------------------	------

Single Bed (offside)	1850 x 680
----------------------	------------

Single Bed (nearside)	1850 x 680
-----------------------	------------

Double Bed	1870 x 1850
------------	-------------

Overcab Bed	n/a
-------------	-----

Fresh Water Tank Capacity (litres)	69
------------------------------------	----

Waste Water Tank Capacity (litres)	40
------------------------------------	----

Gas, Refillable Tank, LPG	25 Litres
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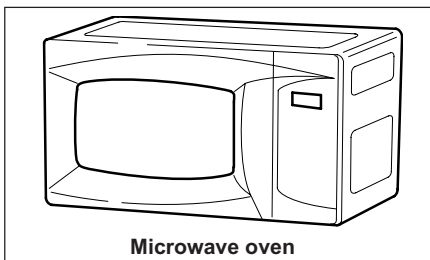
## IMPORTANT

To maximise the usage of fitted equipment in your motorhome it is essential that any accompanying manufacturers' literature is read fully. All recommended maintenance and preparation procedures should be followed. The information provided in this manual is only intended as a guide. If in any doubt consult your manufacturer appointed dealer, particularly before attempting to install extra equipment.

In the interests of safety, replacement parts for an appliance shall conform to the appliance manufacturer's specifications and should be fitted by him or his authorised agent.

## MICROWAVE

**Model: Daewoo KOR6L1B**



**Microwave oven**

Features:

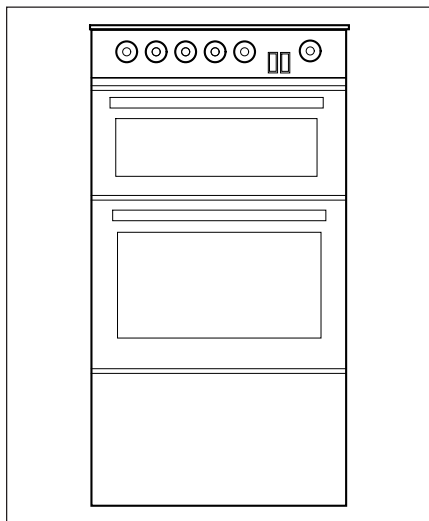
- Oven volume in Litres: 20.
- Ten power steps.
- Maximum Wattage: 700.
- Turntable.
- Electronic time control.
- Touch control.

*Separate operating instructions are supplied with this equipment.*

## BARBECUE GAS POINT

An external gas point is located on the nearside of the van behind a lockable flap. The Reich unit has a tap to enable the gas supply to be cut off prior to connection or disconnection of an external gas appliance.

## CAPRICE Mk III BUILT IN OVEN



### OPERATION

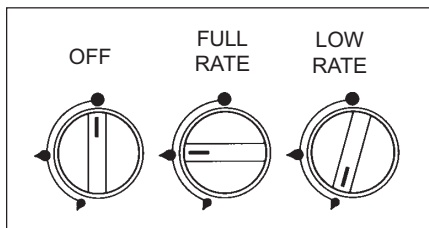
Ensure the gas cylinder is turned on.

In the event of a gas smell turn off at the cylinder and contact supplier.

### HOTPLATE BURNERS

#### Cautions:

- (1) When cooking, young children should be kept away.
- (2) Glass lids may shatter when heated. Turn off all burners and grill before shutting lid.
- (3) Spillage on the surface of the lid should be removed before opening the lid.
- (4) Do not use foil on the hob, as it creates a fire hazard.





To light the grill, push in the control knob and turn 90 degrees anti-clockwise to full rate. Hold a lighted match or taper to the burner and push the control knob in and hold. It is necessary to hold the knob depressed after the burner has ignited for approximately 10-15 seconds, to allow the thermocouple probe to reach temperature, before releasing the knob. Should the flame go out when the knob is released, the procedure should be repeated holding the knob depressed for slightly longer.

For models fitted with spark ignition the procedure is similar except that the burner can be ignited by depressing the ignition button, which is located on the fascia. If the burner has not lit within 15 seconds the control knob should be released and the burner left for at least one minute before a further attempt to ignite the burner.

For simmering, turn the knob further anti-clockwise to the low rate position.

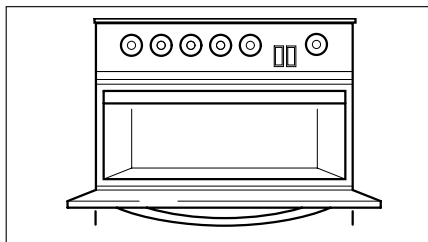
To turn off: Turn the control knob until the line on the control knob is aligned with the dot on the control panel. Always make sure the control knob is in the off position when you have finished using the hotplate burners.

### IMPORTANT:

- The pan supplied with the appliance is multi functional, for use in grill or oven.
- The handle design allows removal or insertion whilst the pan is in use.
- Always remove the handle when the pan is in use.

## THE GRILL

The door must be open when the grill is used.



### Cautions:

- (1) When the grill is being used, accessible parts may be hot, young children must be kept away.
- (2) Never cover the grill pan or trivet with cooking foil, or allow fat to build up in the grill pan as this causes a fire hazard.
- (3) Keep all flammable material away from the appliance.

To light the grill, push in the control knob and turn 90 degrees anti-clockwise to full rate. Hold a lighted match or taper to the burner and push the control knob in and hold. The burner should ignite and the control knob should be held in for 10-15 seconds before release. If the burner goes out, repeat procedure holding control knob for slightly longer.

For models fitted with spark ignition the procedure is similar except that the burner can be ignited by depressing the ignition button, which is located on the fascia. Ignition must be carried out with the door open, and if the burner has not lit within 15 seconds the control knob should be released and the grill left for at least one minute before a further attempt to ignite the burner.

On first use of the grill, it should be heated for about 20 minutes to eliminate any residual factory lubricants that might impart unpleasant smells to the food being cooked. A non-toxic smoke may occur when using for the first time so open any windows and turn on mechanical ventilators to help remove the smoke.



Although the grill does heat up quickly, it is recommended that a few minutes preheat be allowed.

**Flame Failure Device (FFD):** The grill burner is fitted with a flame sensing probe, which will automatically cut off the gas supply in the event of the flame going out. In the event of the burner flames being accidentally extinguished, turn off the burner control and do not attempt to re-ignite the burner for at least one minute.

It is normal for the flames on this burner to develop yellow tips as it heats up, particularly on butane.

A reversible grill pan trivet enables the correct grilling height to be achieved.

Fast toasting ..... trivet in high position  
Grilling sausages ..... trivet in high position  
Grilling steak/bacon .... trivet in high position  
Grilling chops, etc. .... trivet in low position  
Slow grilling ..... trivet removed

To turn off, turn the control knob until the line on the control knob is aligned with the dot on the control panel. Always make sure the control knob is in the off position when you have finished grilling.

## THE OVEN

### Cautions:

- (1) When you are cooking, keep children away from the oven.
- (2) Do not use foil on the oven shelves, as this creates a fire hazard and can hinder circulation of heat.

To light: Open door, push in the control knob and turn to gas mark 9. Hold a lighted match or taper to the burner and push the control knob in and hold. The burner should ignite and the control knob should be held in for 10-15 seconds before release. If the burner goes out, repeat procedure holding control knob for slightly longer.

For models fitted with spark ignition the procedure is similar except that the burner can be ignited by depressing the ignition button, which is located on the fascia. Ignition must be carried out with the door open, and if

the burner has not lit within 15 seconds the control knob should be released and the oven left off at least one minute before a further attempt to ignite the burner.

Place the oven shelf in the required position and close the door. Set control knob to approximately gas mark 5 and heat the oven for about 30 minutes to eliminate any residual factory lubricants that might impart unpleasant smells to the meals being cooked. A non-toxic smoke may occur when using for the first time so open any windows and turn on mechanical ventilators to help remove the smoke.

Although the oven does heat up quickly, it is recommended that a 10 minute preheat be allowed. The oven should be up to full temperature in about 15-20 minutes.

To turn off: turn the control knob until the line on the control knob is aligned with the dot on the control panel.

**Shelf:** The shelf has been designed to allow good circulation at the rear of the oven and are also fitted with a raised bar to prevent trays or dishes making contact with the back of the oven. To remove a shelf, pull forward until it stops, raise at front and remove.

### WARNINGS:

**All pans should be mounted centrally over the burners, even when cooling, to protect adjacent walls.**

**Do not lower hob cover until hobs have cooled.**

**On no account should these appliances be used as a space heater.**

### Do's and Don'ts

- Do** read the user instructions carefully before using the appliance for the first time.
- Do** allow the oven to heat before using for the first time, in order to expel any smells before the introduction of food.
- Do** clean the appliance regularly.
- Do** remove spills as soon as they occur.
- Do** always use oven gloves when removing food shelves and trays from the oven.
- Do** check that controls are in the off position when finished.



- Do not** allow children near the cooker when in use. Turn pan handles away from the front so that they cannot be caught accidentally.
- Do not** allow fats or oils to build up in the oven trays or base.
- Do not** use abrasive cleaners or powders that will scratch the surfaces of the hotplate and oven.
- Do not** under any circumstances use the oven as a space heater.

## Temperature control

The temperature in the oven is controlled by a thermostatic gas tap and is variable over the range 130 deg C to 240 deg C. Approximate temperatures for the settings on the control knob are shown in the following table. The temperatures indicated refer to the centre of the oven and at any particular setting the oven will be hotter at the top and cooler towards the base. The variation between the top and centre, and centre to bottom is approximately equivalent to one gas mark. Good use can be made of the temperature variation in that several dishes requiring different temperatures may be cooked at the same time. In this way maximum benefit can be obtained from the gas used to heat the oven. Care should be taken not to overload the oven, adequate spacing being used to allow free circulation for heat.

## Cooking guidelines

**IMPORTANT** - The pan supplied with the oven is multifunctional, for use in grill and oven. The handle design allows for removal or insertion whilst the pan is in use. Always remove the handle when in use.

Larger items may adversely affect the circulation and heat distribution. Best results will be obtained by the shelf positions in this guide. It is not necessary to preheat the oven but advisable for a range of dishes. The oven is capable of full temperature in 15-20 minutes.

Most cookery books give details of the shelf positions and gas mark settings for each recipe. If in doubt about a recipe you intend to use, study the recipe carefully then find a

similar dish in our guide and use our shelf position and gas mark setting recommendation. Shelf positions are from the top down. When roasting with aluminium foil care must be taken that the foil does not impair circulation or block the oven flue outlet.

## Leaks

If a smell of gas becomes apparent, the supply should be turned off at the cylinder **IMMEDIATELY**. Extinguish naked lights including cigarettes and pipes. Do not operate electrical switches. Open all doors and windows to disperse any gas escape. Butane/Propane gas is heavier than air, any escaping gas will therefore collect at low level. The strong unpleasant smell of gas will enable the general area of the leak to be detected. Check that the gas is not escaping from an unlit appliance. Never check for leaks with a naked flame, leak investigation should be carried out using a leak detector spray.





Gas Mark	Temperature			
1/4 - 1/2	265-275°F	130-135°C	Very cool	Meringues
1	285	140	Cool	Stewed fruit
2	300	150	Cool	Rich fruit cake
3	330	165	Warm	Baked custard
4	355	180	Moderate	Victoria sandwich
5	385	195	Fairly hot	Whisked sponges
6	410	210	Hot	Shortcrust pastry
7	430	220	Hot	Bread, scones
8	445	230	Very hot	Puff pastry
9	465	240	Very hot	Quick browning
Dish	Gas Mark	Shelf Position	Cooking Time	
Scones	7	2	8-15 mins	
Small cakes	5	2	15-25 mins	
Victoria sandwich	4	2	20-30 mins	
Very rich fruit cake	2	2	Approx. 60 mins per 500g	
Puff pastry	8	2	15-30 mins	
Flaky pastry	7	2	15-30 mins	
Shortcrust pastry	6	2	15-55 mins	
Shortbread fingers	3	2	25-30 mins	
Ginger nuts	5	2	12-16 mins	
Rice pudding	2	3	100-120 mins	
Baked custard	3	3	50-60 mins	
Fruit crumble	5	3	30-40 mins	
Beef	3	3	25 mins per 500g plus 25 mins	
	7	3	15 mins per 500g plus 20 mins	
Pork	3	3	30 mins per 500g plus 35 mins	
	7	3	25 mins per 500g plus 25 mins	



## DOMETIC CK2000 AIR CIRCULATING COOKER HOOD

With 50 m<sup>3</sup>/h capacity 'Circulair' performs more efficiently than conventional cooker hoods - while offering a low DC-consumption of only 5 watts.

A roof mounted ventilator is no longer necessary as the cleaned air is returned downwards while the suction is concentrated along the edges. This creates an air-dome which stops fumes escaping.

### Features:

- Lateral air suction ensures efficient performance with 50 m<sup>3</sup>/h.
- Easy installation as no roof-mounted ventilator is necessary.
- With 2 fan-speed regulation and integrated halogen lights.
- Washable grease filter and exchangeable carbon filter.
- Snap-on releases for easy access to filters and lamps.

### Technical data:

Weight .....	2.2 kg
Height .....	55 mm
Width .....	400 mm
Depth .....	280 mm
Halogen lamps .....	2 x 10W
Lamps (V) .....	12

## SEITZ CONCERTINA BLINDS

The windows of the habitation area are fitted with concertina blinds and flyscreens.

The flyscreens pull down from the top, the concertina blinds up from the base and a combination of both may be achieved by clipping both units together in the centre to adopt the required position. It should be remembered that both the flyscreens and concertina blinds are relatively delicate and those in the living area should be treated with care. They should be kept in a dry and dust-free state, it is advised that the mechanisms are only lightly lubricated when they become a little stiff and inoperative - otherwise no maintenance is needed.

The concertina blinds are manufactured from a paper type material and thus cleaning solvents and aerosols should be kept well clear from them.

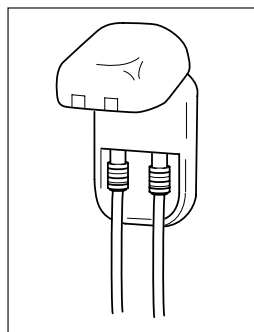
Unlike Seitz roller blinds, they will not need to be re-tensioned - any problems that should arise should be addressed to your Auto-Sleeper dealer or the Motorhome Service Centre at Willersey.

## TV COAX AERIAL/SOCKET

The TV aerial socket is positioned on the pillar between the kitchen worktop and the upper lockers.. The unit incorporates a two-pin 12-volt plug and socket and is already pre-wired to the TV aerial which is fitted as standard fit on the vehicle.

## EXTERNAL TV SOCKET

An external weatherproof cable entry point for TV and satellite cable is fitted to the offside of the motorhome.





## WARM AIR & HOT WATER HEATING

A Truma liquid gas Combi 4E warm-air heater, with integrated hot water boiler, is fitted under the forward end of the offside sofa. It operates on LPG and/or 230V electricity depending on the chosen mode of operation.

In winter operation the heater can be used to heat the room and simultaneously warm water. If only warm water is required, select summer operation.

At a temperature of approximately 3 deg C the automatic frost control safety/drain valve will open and drain the boiler.

Three different options are available for operating the unit.

Gas operation only: Propane/butane for autonomous use.

Electrical operation only: 230V for stationary use on camp sites.

Mixed operation: Gas and electrical operation - only possible in winter mode.

### Winter operation

In winter operation, the unit automatically selects the required power setting according to the temperature difference between the temperature set on the control panel and the current room temperature. When the boiler is filled, the water is automatically heated as well. The water temperature depends on the selected operation mode and the heater output.

All three energy selection options can be used for winter deployment.

With gas operation the unit automatically selects the output level that is required.

Depending on the fuse protection at the camping site, power of 900W (3.9A) or 1800W (7.8A) can be manually selected for electrical operation.

If more output is required (e.g. heating up or low outside temperatures) gas or mixed operation should be selected so that enough heating power is always available.

With mixed operation, 230V electrical

operation is preferred if the power requirement is low (e.g. for maintaining the room temperature). The gas burner is not enabled until the power requirement is higher, and is the first to switch off during heat-up operations.

### Summer operation (boiler operation only)

Gas operation or 230V electrical operation is used for hot water preparation. The water temperature can be set to 40 deg°C or 60°C.

With gas operation the water is heated at the lowest burner setting. Once the water temperature is reached, the burner switches off.

Depending on the fuse protection at the camping site, power of 900W (3.9A) or 1800w (7.8A) can be manually selected for electrical operation.

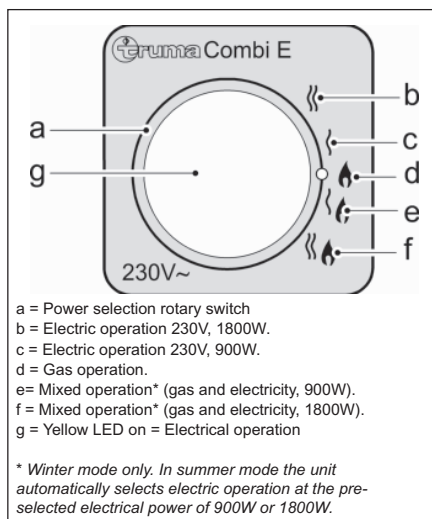
**Note:** Mixed operation is not possible. With this setting the unit automatically selects electrical operation. The gas burner is not enabled.

## OPERATING INSTRUCTIONS

**Caution:** Always observe the operating instructions and "Important operating notes" prior to starting. The vehicle owner is responsible for the correct operation of the appliance.

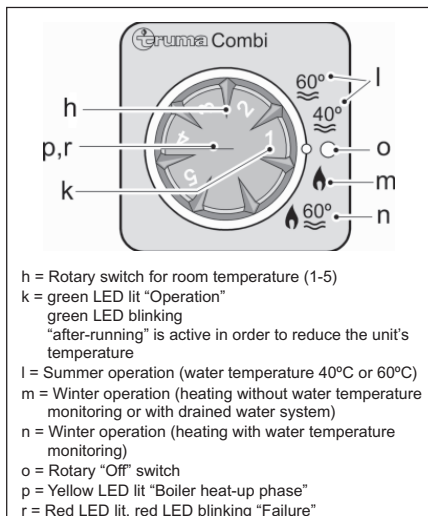
**Note:** Before using for the first time, it is essential to flush the entire water supply through with clean warm water. If the heater is not being used, always drain the water contents if there is a risk of frost. There can be no claims under guarantee for damage caused by frost!

### Power selector switch



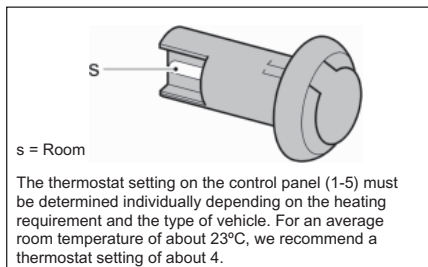
**Note:** Switching on the electric heating elements as well does not increase the maximum heating power.

### Control panel



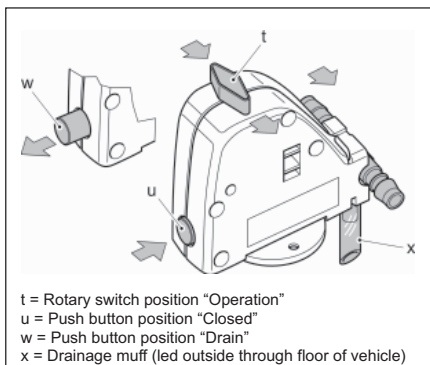
**Note:** The LEDs are visible only when the unit is switched on.

### Room thermostat



To measure the room temperature, an external room temperature sensor is located in the vehicle. The location of the sensor is determined individually by the vehicle manufacturer, depending on the vehicle type; consult the operation instructions for your vehicle for further details.

## FrostControl (safety/drain valve)



FrostControl is a currentless safety/drain valve. When there is a danger of frost, it automatically drains the contents of the boiler through a drainage muff. If excessive pressure is present in the system, pressure will be automatically intermittently equalised through the pressure relief valve.

### Closing the drain valve

Check if the rotary switch is set to "Operation" (position t), meaning that it is parallel to the water connection and engaged.

Close the drain valve by activating the push button. The push button must engage in position (u) "closed".

It can be manually closed with the push button (position u) and then the boiler filled only when the temperature at the drain valve is above approximately 7°C.

Truma can provide a heating element (part no. 70070-01) as an accessory; it is inserted into FrostControl and warms it up to about 10°C when Combi is switched on. This means that the boiler can be filled after a shorter time, irrespective of the temperature in the installation compartment.

### Automatic opening of the drain valve

When the temperature is below approximately 3°C at the drain valve, the drain valve will open automatically, the push button moves out (position w) and the water in the boiler drains out through the drainage muff (x).

## Manual opening of the drain valve

Turn the rotary switch by 180° until it engages, whereby the push button moves out (position w). The water in the boiler drains out through the drainage muff (x).

The FrostControl drainage muff (x) must be free of contamination (slush, ice, leaves, etc.) at all times so the water can drain out easily. *No warranty given for frost damage.*

## Taking into operation

**Note:** Heating is possible without restrictions with gas, electrical and mixed operation, with or without water.

Check to make sure the cowl is unobstructed. Be sure to remove any covers that may be present.

Turn on the gas cylinder and open quick-acting valve in the gas supply line.

Check whether the power supply fuse protection on the camp site is adequate for the 900W (3.9A) or 1800W (7.8A) that have been selected using the power selector switch.

The cable drum must be fully unwound in order to prevent the power cable from overheating.

## Summer operation (boiler operation only)

Select gas or electrical operation using the power selector switch. Illumination of the yellow LED (g) on the power selector switch indicates that the unit is operating with 230V.

**Note:** Mixed operation (gas and electrical) is not possible in summer mode. With this setting the unit automatically selects electrical operation with a pre-selected power setting of 900W or 1800W.

Move the rotary switch on the control panel to position (I - summer operation) 40°C or 60°C. The green (k) and yellow (p) LEDs light up.

When the selected water temperature is reached (40°C or 60°C) the heater shuts off and the yellow LED (p) goes off.



## Winter operation

### Heating with water temperature monitoring:

Select gas, electrical or mixed operation using the power switch. Illumination of the yellow LED (g) on the power selector switch indicates that the unit is operating with 230V.

Move rotary switch on control panel to operating position (n).

Set the rotary switch (h) to the desired thermostat setting (1-5). the green LED (k) for operation is lit and simultaneously indicates the position of the selected room temperature. The yellow LED (p) indicates the water's heat-up phase.

The device automatically selects the required power setting in accordance with the temperature difference between the temperature selected on the control panel and the current room temperature. When the room temperature selected on the control panel is reached, the heater switches back to the smallest setting and heats the water to 60°C. Once the water temperature is reached, the heater switches off and the yellow LED (p) goes out.

The warm air fan can continue to run in order to cool the unit (after-run).

### Heating without water temperature monitoring:

Select gas, electrical or mixed operation using the power switch. Illumination of the yellow LED (g) on the power selector switch indicates that the unit is operating with 230V.

Move rotary switch on control panel to operating position (m).

Turn the rotary switch (h) to the desired thermostat setting (1-5). The green LED (k) for operation is lit and simultaneously indicates the position of the selected room temperature. The yellow LED (p - water's heat-up phase) will be lit only when the water temperature is below 5°C!

The device automatically selects the requires power setting in accordance with the temperature difference between the

temperature selected on the control panel and the current room temperature. Once the room temperature selected on the control panel has been reached, the heater switches off. The warm air fan continues to run at slow speed until the out-going air temperature (on the unit) has fallen to 40°C or less.

If the boiler is filled, the water will automatically be heated at the same time. The water temperature is then dependent on the heating output being given off, and the duration of heating required to reach the desired room temperature.

### Heating with drained water system:

Select gas or electrical operation using the power selector switch. Illumination of the yellow LED (g) on the power selector switch indicates that the unit is operating with 230V.

Move rotary switch on control panel to operating position (m).

Turn the rotary switch (h) to the desired thermostat setting (1-5). The green LED (k) for operation is lit and simultaneously indicates the position of the selected room temperature. the yellow LED (p) will be lit only when the temperature of the unit is below 5°C!

Depending on the operating mode, the unit will automatically select the required power level according to the temperature difference between the setting on the control panel and the current room temperature. Once the room temperature selected on the control panel has been reached, the heater switches off. The warm air fan continues to run at slow speed until the outgoing air temperature (on the unit) has fallen to 40°C or less.



## Switching off

Switch off heater at control panel using rotary switch (position o). The green LED (k) goes off.

**Note:** If the green LED (k) blinks after switching off, then the unit's after-running is active in order to reduce the unit's temperature. This will end after a few minutes and the green LED (k) will go off.

**CAUTION:** Always drain water contents if there is risk of frost!

If the appliance is not to be used for a prolonged period, close the quick-acting valve in the gas supply line and turn off the gas cylinder.

## Gas operation fault

If a fault occurs during gas operation the red LED (r) on the control panel illuminates.

Please consult the troubleshooting list for possible causes.

A reset (fault reset) is carried out by switching off, waiting until all LED's on the control panel have stopped flashing, and then switching the heater on again.

**Note:** If a window to which a window switch has been fitted is opened, the heater stops operating and the red LED (r) flashes. The heater continues operating when the window is closed.

## Electrical operation fault

If a fault occurs during electrical operation the yellow indicator lamp (g) on the power selector switch goes off.

Possible causes can be found in the troubleshooting list.

**Note:** If the 230V power supply is interrupted for just a brief period of approximately one second during operation, the heater will subsequently resume as normal.

## Filling the water heater

Check if the rotary switch for the drain valve (FrostControl) is set to "Operation", meaning that it is parallel to the water connection and engaged.

Close the drain valve by pushing the push button until it engages.

**Note:** When the temperature at FrostControl is below about 7°C, first switch on the heater to warm the installation compartment and FrostControl. After several minutes, when the temperature at FrostControl is above 7°C, the drain valve can be closed.

Switch on power for water pump (main or pump switch).

Open hot water taps in kitchen and bathroom (set pre-selecting mixing taps or single-lever fittings to "hot"). Leave the fittings open for as long as it takes for the boiler to displace the air and fill up, and the water to flow without interruption.

**Note:** If just the cold water system is being operated, without using the water heater, the heater tank also fills up with water. To avoid frost damage, the boiler must be drained through the drain valve, even if it was not operated.

**WARNING:** When connecting to a central water supply (rural or city mains), a pressure reduction valve must always be installed to prevent pressures above 2.8 bar from developing in the water heater.

## Draining the water heater

Switch off power to water pump (main or pump switch).

Open hot water taps in kitchen and bathroom.

In order to check the water that is flowing out, place an appropriate container (capacity 10 litres) beneath the drain valve (FrostControl) drainage muff (x).

Turn the rotary switch on the drain valve by 180° until it engages, whereby the push button moves out and the drain valve opens.

Check whether all of the water in the boiler (10 litres) has been drained into the container via the drain valve.

*There shall be no claims under guarantee for damage caused by frost!*

## Maintenance

Only original Truma parts may be used for maintenance and repair work!

The materials in the device that come into

contact with water are drinking water safe.

Bio-film, deposits and limescale must be removed using chemicals to protect the unit from infestation by micro-organisms. Only Chloride-free products must be used in order to prevent damage to the unit.

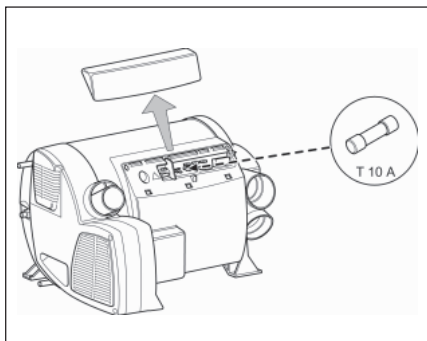
The effectiveness of the use of chemicals to combat micro-organisms in the unit can be increased by heating the water in the boiler to 70°C at regular intervals.

Move power selector switch to gas operation (d) to do this.

Move the rotary switch on the control panel to position (I - summer operation) 60°C. the green (k) and yellow (p) LEDs light up.

**Note:** Once the water in the boiler has reached a temperature of 60°C, the burner will switch off and the yellow LED (p) will go out. The unit must stay switched on for at least 30 minutes and no warm water may be removed. The residual heat in the heat exchanger will heat the water up to 70°C.

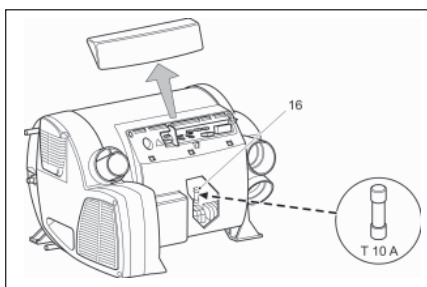
## Fuses 12V



The fuse is in the electronics beneath the connection cover. Replace the unit's fuse only with an identical fuse.

Device fuse: 10A - slow - (T 10A).

## Fuses 230V



**CAUTION:** The fuse and the power supply lines must only be replaced by an expert!

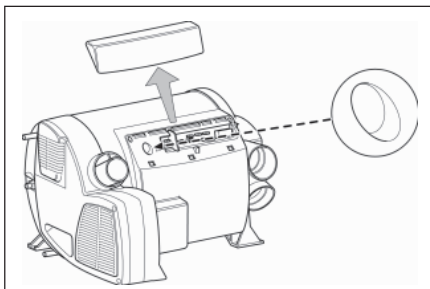
**WARNING:** The unit must be disconnected from the mains (all poles) before opening the electronic housing lid.

The fuse in the power electronics (16) beneath the electronic housing lid.

This fine fuse must always be replaced with a fuse of the same type: 10A, slow, interrupting capacity "H".



## Overheating protection 230V



The 230V heating facility has a mechanical overheating switch. If the 12V power supply is interrupted during operation or during the after-run period, for example, the temperatures within the unit could activate the overheating protection.

To reset the overheating protection, allow heater to cool, remove connection cover and press red reset button.



## TROUBLESHOOTING LIST

Fault	Cause	Rectification
After switching on (winter and summer operation) none of the LEDs are lit.	<ul style="list-style-type: none"><li>- No operating voltage.</li><li>- Device fuse or vehicle fuse defective.</li></ul>	<ul style="list-style-type: none"><li>- Check battery voltage (12V).</li><li>- Check all electrical plug connections.</li><li>- Check the unit or vehicle fuse and replace if necessary (see fuses).</li></ul>
The green LED comes on when the unit is switched on (by means of the ZUCB time switch), but the heater does not operate.	<ul style="list-style-type: none"><li>- The temperature setting on the control panel is lower than the room temperature.</li></ul>	<ul style="list-style-type: none"><li>- Select higher room temperature at the control panel.</li></ul>
The green LED comes on when the unit is switched on (by means of the ZUCB time switch), but the heater does not operate.	<ul style="list-style-type: none"><li>- Open window above cowl. (window switch).</li><li>- Battery voltage is too low &lt; 10.5V.</li></ul>	<ul style="list-style-type: none"><li>- Close window.</li><li>- Charge battery.</li></ul>
After the heater is switched on, the green LED is lit and the red LED blinks.	<ul style="list-style-type: none"><li>- Electronics are defective.</li></ul>	<ul style="list-style-type: none"><li>- Please contact the Truma Service Centre.</li></ul>
Approximately 30 seconds after the heater is switched on, the red LED is lit.	<ul style="list-style-type: none"><li>- Gas cylinder or quick-closure valve in the gas line is closed.</li><li>- Combustion air infeed or exhaust outlet is sealed.</li></ul>	<ul style="list-style-type: none"><li>- Check gas supply and open valves.</li><li>- Inspect openings for contamination (slush, ice, leaves, etc.) and remove contamination if necessary.</li></ul>
After operating for a longer period of time, the heater switches to failure.	<ul style="list-style-type: none"><li>- Hot-air outlets blocked.</li><li>- Recirculated air intake</li><li>- Gas pressure regulator iced up</li><li>- Butane content in the gas cylinder too high.</li></ul>	<ul style="list-style-type: none"><li>- Check individual outlet apertures.</li><li>- Remove blockage from recirculated air intake.</li><li>- Use regulator heating (EisEx).</li><li>- Use propane (at temperatures below 10°C in particular, butane is unsuitable for heating purposes).</li></ul>
Green and red LEDs blink after heater is switched off.	<ul style="list-style-type: none"><li>- Unit was switched off during failure. After-running is active in order to reduce the unit's temperature.</li></ul>	<ul style="list-style-type: none"><li>- After-running will switch off after a few minutes. Only at that time will a failure reset be possible (switch off and then back on).</li></ul>
Green LED blinks after heater is switched off.	<ul style="list-style-type: none"><li>- After-running is active in order to reduce the unit's temperature.</li></ul>	<ul style="list-style-type: none"><li>- No failure. After-running will switch off after approximately 5 minutes. The heater can be switched back on at any time during the after-running phase in winter operation (in summer operation only after two minutes).</li></ul>
When the device is switched on in electrical operation the red LED on the control panel flashes, the yellow LED on the power selector switch does not illuminate and the heater does not heat up.	<ul style="list-style-type: none"><li>- No 230 V operating voltage.</li><li>- 230 V fuse defective.</li><li>- Overheating protection has activated.</li></ul>	<ul style="list-style-type: none"><li>- Check 230 V operating voltage.</li><li>- Check 230 V fuse and replace if necessary.</li><li>- Reset overheating protection. Allow heater to cool, remove connection cover and press reset button.</li></ul>



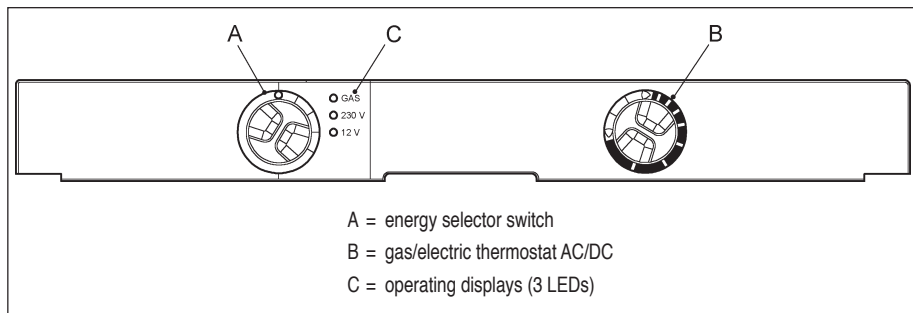
## WATER SUPPLY

Fault	Cause	Rectification
After the heater is switched off, the drain valve opens (FrostControl).	- Temperature at drain valve less than approx. 3°C.	- Switch the heater on. If the temperature is below approximately 3°C, the drain valve will open automatically! If the heater is not in operation, the drain valve can be reclosed only when the temperature is approximately 7°C or higher! - Use heating element for FrostControl.
The drain valve (FrostControl) can no longer be closed.	- Temperature at drain valve is below approximately 7°C. - Rotary switch is not at "Operation".	- Switch the heater on. If the heater is not in operation, the drain valve can be reclosed only when the temperature is approximately 7°C or higher! - Turn the drain valve's rotary switch to "Operation", then press the push button until it engages.
Water flows intermittently from the FrostControl drain muff.	- Water pressure too high.	- Check pump pressure (max. 2.8 bar). If connected to a central water supply (rural or urban connection), a pressure reducer must be used, which will prevent pressures higher than 2.8 bar entering the boiler.

If these measures do not remove the failure, please contact the Truma Service Centre.



## REFRIGERATOR MODEL RM7271L



### Cleaning

Before using the refrigerator, it is advisable to clean the appliance both inside and out.

- Use a soft cloth and lukewarm water with a mild detergent.
- Then rinse the appliance with clean water and dry thoroughly.
- Remove dust from the refrigerator unit at yearly intervals using a brush or soft cloth.

### **WARNING: To avoid deterioration of materials:**

1. Do not use soap or hard, abrasive or soda-based cleaning agents.
2. Do not allow the door seal to come into contact with oil or grease.

### Using the refrigerator

- The cooling unit is silent in operation.
- When the appliance is first put into operation, there may be a mild odour which will disappear after a few hours. Ensure the living area is well ventilated.
- The refrigerator will take several hours to reach its operating temperature in the cooling compartment.
- The freezer compartment should be cold about one hour after switching on the refrigerator.

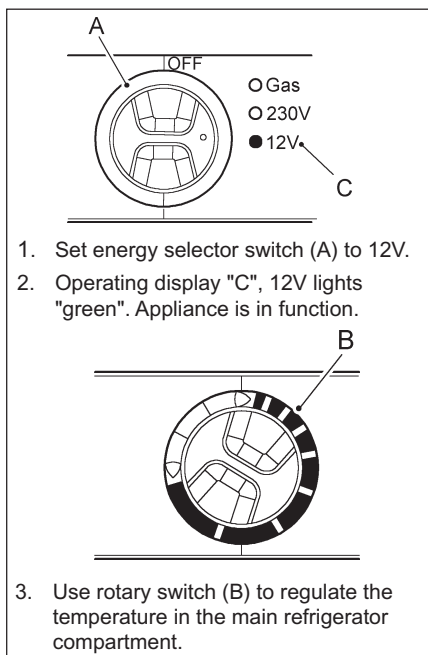
**Note:** An on-board battery is necessary to run your re-igniter refrigerator on gas.

### CONTROLS

#### Energy Selection

#### 12V Electrical Operation (DC)

- The refrigerator will only operate while the motor is running and the vehicle in motion.



## Mains Power

This option should only be selected where the supply voltage of the connection for power supply corresponds to the value specified on the data plate. Any difference in values may result in damage to the appliance.

The diagram shows two controls. Control A is a rotary switch with positions for 'OFF', 'Gas', '230V', and '12V'. Control B is a rotary switch with positions for 'MAX' and 'MIN'.

1. Set energy selector switch (A) to 230V.
2. Operating display "C" , 230V lights "green". Appliance is in function.
3. Use rotary switch (B) to regulate the temperature in the main refrigerator compartment.

## Gas Operation

The ignition process is activated automatically, accompanied by a ticking sound approx. 30 sec. Upon successful ignition, the display LED (C) "Gas" lights yellow. The refrigerator is in function. Use rotary switch (B) to regulate the temperature in the main refrigerator compartment.

## Gas Faults

The diagram shows the energy selector switch (A) and the operating display (C). The switch is in the 'OFF' position. The display (C) shows 'Gas', '230V', and '12V'.

1. Open the valve of the gas cylinder.
2. Open the shut-off valve to the gas supply.
3. Set energy selector switch (A) to gas.
4. Set rotary switch (B) to "MAX" position.

### Remedies:

Set the energy selector switch (A) to position "OFF".

1. Is there any gas in the gas bottle?
2. Is the gas bottle valve open?
3. Is the on-board shut-off valve open?
4. Set the main switch (A) to "on". The reignition starts again.

The diagram shows the energy selector switch (A) and the operating display (C). The switch is in the 'OFF' position. The display (C) shows 'Gas', '230V', and '12V'.

In the event of a gas fault (e.g. gas cylinder empty), the operating display (C) flashes yellow.

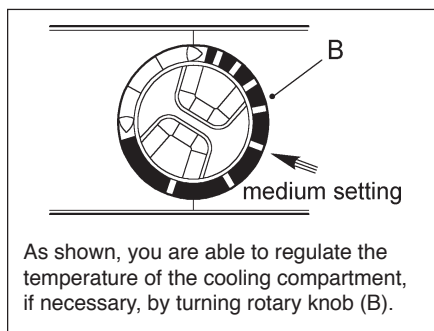
If after about 30 seconds the operating display (C) starts flashing red again, the gas fault has not been cleared (e.g. air in the gas pipe).

5. Briefly switch the refrigerator off and then on again using main switch (A). To remove air from the gas pipes, repeat this procedure 3-4 times.

If these actions do not help, please call an authorised Dometic Service Centre.

## Temperature Setting Cooling Compartment

- The cooling unit's performance is influenced by ambient temperatures.
- TIP: Please select the medium setting for ambient temperatures between +15°C and +25°C. The unit operates within its optimum performance range.



## Storing food

- Always store food in sealed containers, aluminium foil or similar.
- Never put hot food into the refrigerator, always let it cool down first.
- Products that could emit volatile, flammable gases must not be stored in the refrigerator.
- Store quickly perishable foods directly next to the cooling fins.

The freezer compartment is suitable for making ice cubes and for short-term storage of frozen food. It is not suitable as a means of freezing foods.

## Making Ice Cubes

Ice cubes are best frozen overnight. At night, the refrigerator has less work to do and the unit has more reserves.

**WARNING:** Only use drinking water!

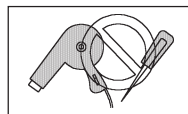
## Defrosting

As time goes by, frost builds up on the fins. When the layer of frost is about 3mm thick, the refrigerator should be defrosted.

1. Switch off the refrigerator, as described in "Switching Off".
2. Remove the ice cube tray and food.
3. Leave the refrigerator door open.
4. After defrosting (freezer compartment and fins free of frost), wipe the cabinet dry with a cloth.
5. Use a cloth to mop up the water from the freezer compartment.
6. Switch the refrigerator back on again.

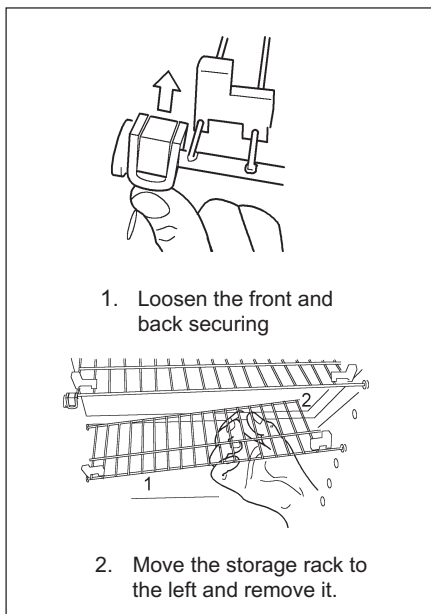
**WARNING:** The layer of ice must never be removed forcibly, nor may defrosting be accelerated using a heat source.

**Note:** Water thawing in the main compartment of the refrigerator runs into an appropriate container at the back of the refrigerator. From there, the water evaporates.



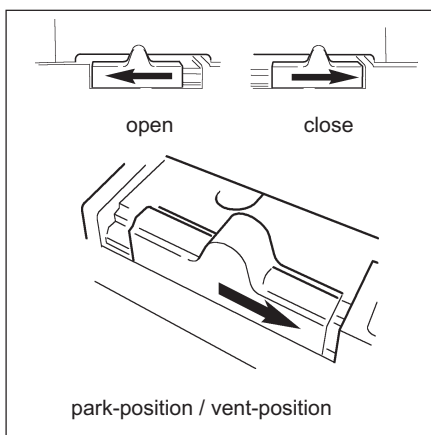
## Positioning the storage rack

### Dismantling:

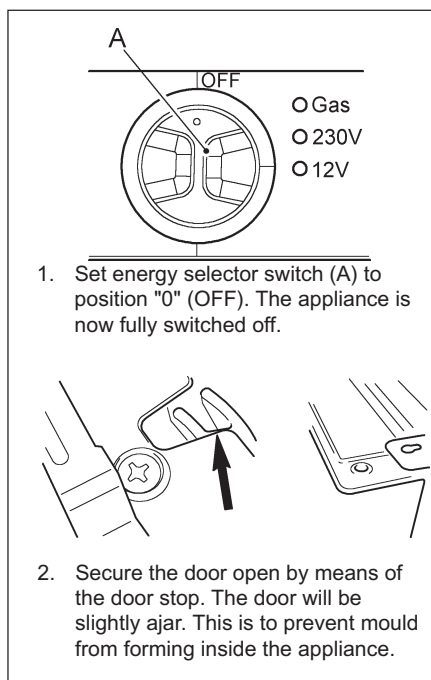


To fit the storage rack, the reverse order applies.

### Door locking

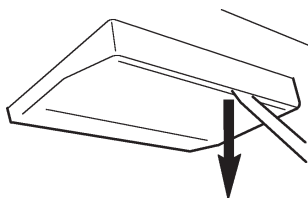


## Switching off

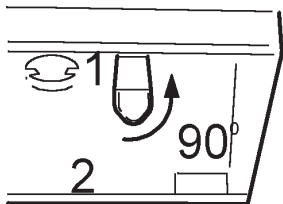


**Note:** Switching off gas operation. If the refrigerator is to be taken out of service for an extended period of time, the on-board shut-off valve and the cylinder valve must be closed.

## Changing the light bulb



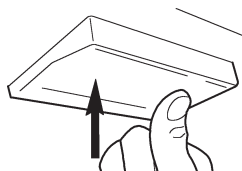
1. Remove cover



2. Detach defective light bulb



3 Fit new light bulb



4. Clip the cover back in place

### Note:

For 12V DC:

1 light bulb 12V, 2W

Please contact Dometic Service Centres for replacement light bulbs.

## Energy saving tips

- At an average ambient temperature of approximately 25 deg C, it is sufficient to operate the refrigerator at the middle thermostat setting (for both gas and mains voltage).
- Where possible, always store goods that have previously been cooled.
- Do not position the refrigerator in direct sunlight.
- Constant circulation of air must be supplied to the refrigerator unit.
- Defrost regularly.
- Open the door only for a short time when removing goods from the refrigerator.
- Run the refrigerator for about 12 hours before filling it.

## Technical data

Model .....RM 7291L

Dimensions ..... 821x525x541

Capacity ..... 86 lit.

Usable capacity ..... 10.5 lit.

Connection ..... 125W/120W

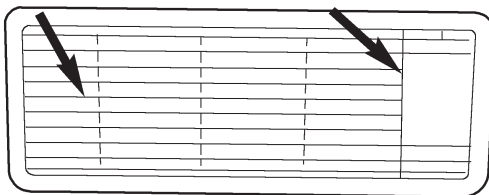
Consumption ..... ca 2.6 KWh/260g

Weight ..... 27 kg

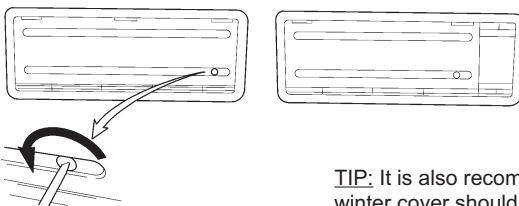


## Winter operation

1. Check that the ventilation grills and the extractor have not been blocked by snow, leaves or similar.



2. When the ambient temperature falls below +8°C, the optional winter covers should be fitted. This protects the unit from excessively cold air.



3. Affix the cover and fasten it.

**TIP:** It is also recommended that the winter cover should be used when the vehicle is taken out of service for an extended period of time.

## Troubleshooting

Before calling the authorised Service Department please check whether:

- The instructions in the section “Using the refrigerator” have been followed.
- The refrigerator is not tilted excessively.
- It is possible to operate the refrigerator with an available power source.

a) Gas bottle empty.

b) Is the supply cut-out device open?

c) Air in the gas pipe?

a) Change gas bottle.

b) Open the cut-out device.

c) Switch device off and on again 3-4 times to remove air from the gas pipe.

### Failure: The refrigerator does not work on 12V.

*Possible cause*

a) On-board fuse defective.

b) On-board battery discharged.

c) Engine not running.

*Action you can take*

a) Fit new fuse.

b) Check battery, charge it.

c) Start engine.

### Failure: The refrigerator does not work on 230V.

*Possible cause*

a) On-board fuse defective.

*Action you can take*

a) Fit new fuse.



## Failure: The refrigerator does not work on 230V (continued)

### Possible cause

- b) No connection to supply voltage.
- c) AES: gas operation despite connection to the supply voltage?

### Action you can take

- b) Establish power connection.
- c) Appliance switches to gas operation due to insufficient supply voltage (automatically switches back to 230V operation).

## Failure: The refrigerator does not cool sufficiently.

### Possible cause

- a) Inadequate ventilation to the unit.
- b) The thermostat setting is too low.
- c) There is too much ice on the condenser.
- d) Too much warm food put inside.
- e) Appliance running for a short time.

### Action you can take

- a) Check that the ventilation grilles are not covered.
- b) Turn the thermostat to a higher setting.
- c) Check that the refrigerator door seals when shut.
- d) Let food cool down first.
- e) Wait several hours, check again.

## Maintenance

- Works on gas components and electrical installation may only be carried out by authorised personnel. We recommend to contact your Dometic Service Centre.
- EN 1949 stipulates that the appliance's gas equipment and its associated fume system must be inspected after installation and a certificate issued.  
Afterwards a qualified technician must inspect according to EN 1949 every two years and a certificate issued.  
It is the user's responsibility to arrange for inspections after purchase.
- It is recommended that the gas burner be inspected and cleaned as necessary at least once a year.

We recommend maintenance following an extended shutdown of the vehicle.

## FURTHER DETAILS

Consult the accompanying literature to obtain the full benefit of your refrigerator.

In the event of failure, contact the Refrigerator Service Department, details of which can be found in your Yellow Pages Directory.



## THETFORD CASSETTE C-402 TOILET

### Preparing for use

Open the access door on the outside of your motorhome.

Turn the water filling funnel outwards, remove the cap and add the stated amount of Thetford toilet fluid for the water tank. This ensures a better and cleaner flush and keeps the water in the flush tank fresh. After this, fill the water tank with clean water.

Screw the cap back onto the water filling funnel and turn it back inwards towards the side of the flush water tank.

**Note:** 150 ml water remains in the water filling funnel when the water tank is empty.

1. Remove the waste tank by pulling the safety catch upwards.
2. Pull the waste tank outward to the stop. Tip it slightly and take the tank fully out.
3. Place the tank upright and turn the emptying spout upwards.
4. Remove the cap, with the measuring cup inside, from the emptying spout and pour the stated quantity of toilet fluid into the waste tank. This avoids unpleasant smells in the waste tank and keeps the inside of the waste tank clean. Next add approximately 2 litres of water - enough to ensure that the bottom of the waste tank is covered. Screw the cap back onto the emptying spout. Turn the emptying spout back to its original position.

**WARNING:** Never add toilet fluid via the valve blade or via the toilet bowl.

5. Slide the waste tank back into its original position via the access door.

**Note:** Never use force if you cannot get the tank back into place easily. This may cause serious damage.

6. Make sure that the waste tank is secured with the safety catch. Shut the access door and lock it.
7. Run water into the bowl by pressing the flush knob briefly or open the valve blade by turning the handle anti-clockwise. Your Thetford toilet is now ready for use.

8. After use, open the valve blade (if still closed) by turning the handle anti-clockwise. Flush the toilet by pressing the flush knob for several seconds. Close the valve blade after use.

**Note:** Do not leave water in the bowl if the toilet is not being used. This does not help to reduce unpleasant smells and only leads to flooding.

Comment: To avoid blockages we advise the use of Thetford's fast dissolving toilet paper, Aqua Soft.

### Emptying

The waste tank has a capacity of 17 litres and must be emptied at the latest when the red light in the level display lights up. The indicator lamp will light up when the waste tank can still take about 2 litres, which is about three uses. It is advisable to empty the waste tank earlier.

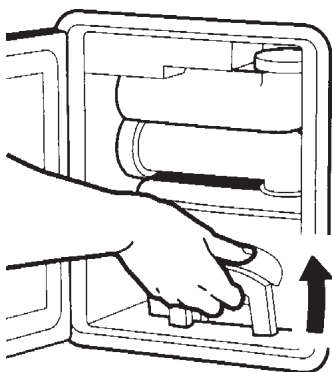
**Note:** Do not allow the waste tank to become too full.

9. Make sure that the valve blade is closed. Open the access door located outside the vehicle. Pull the safety catch upwards and remove the waste tank.
10. Stand the waste tank upright (Pull-out handle at the top, wheels at the bottom). Press the handle down and move it away from the waste tank until it snaps out of its locked position.
11. Pull the handle up and wheel the waste tank to an authorised waste dump.
12. Push the handle back. Turn the emptying spout upwards and remove the cap from the spout. Hold the waste tank by the upper handle with one hand, while placing your other hand by the rear handle so that during emptying you can operate the vent plunger with your thumb. To empty the tank without splashing, depress the vent plunger while emptying the tank. After emptying, flush the tank thoroughly with water. Also clean the valve blade with water.

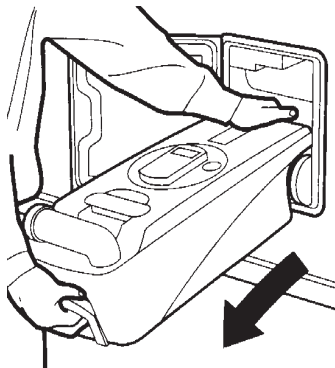
**Note:** The vent plunger should only be pressed once the emptying spout is pointing downwards!



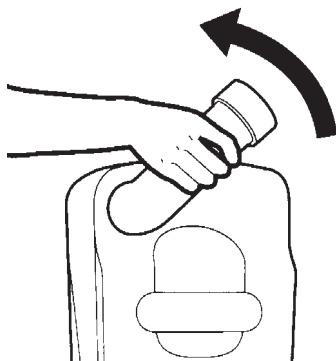
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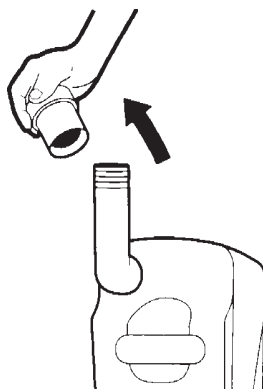
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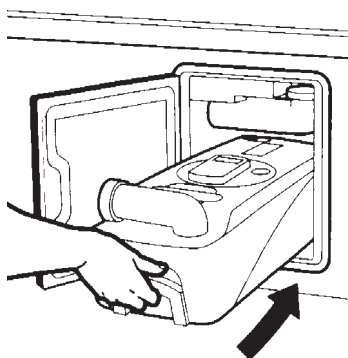
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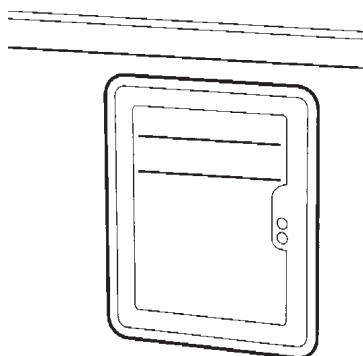
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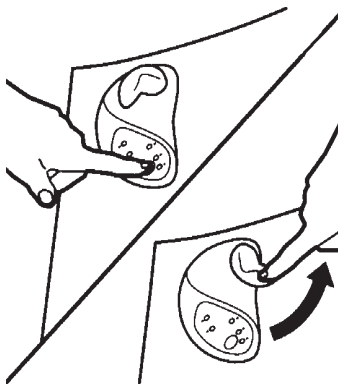
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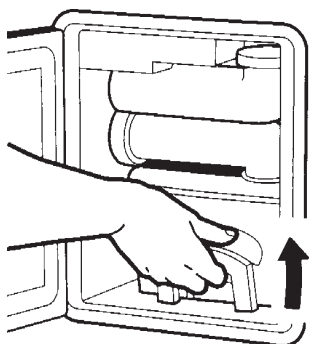
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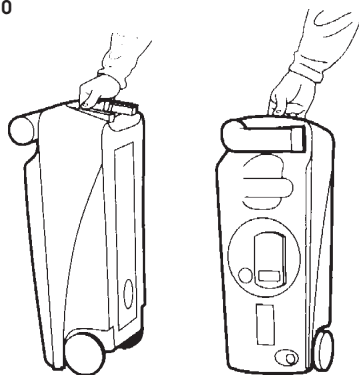
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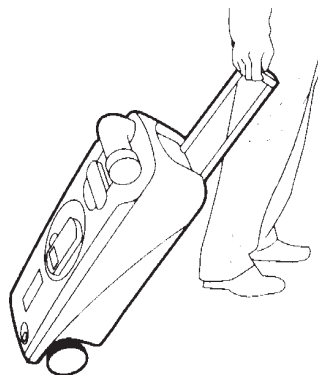
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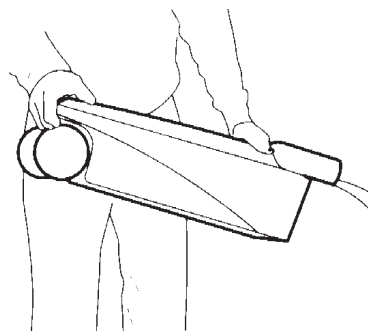
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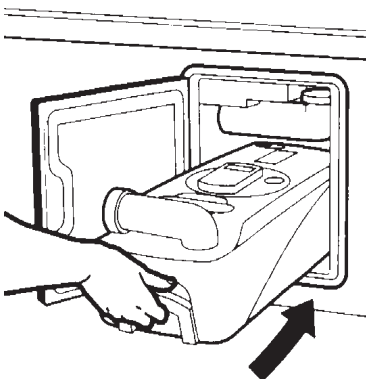


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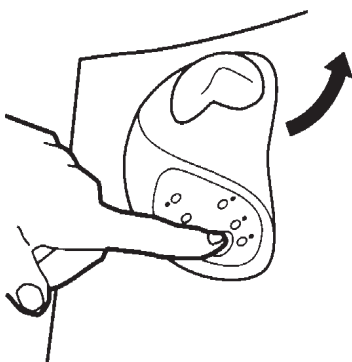




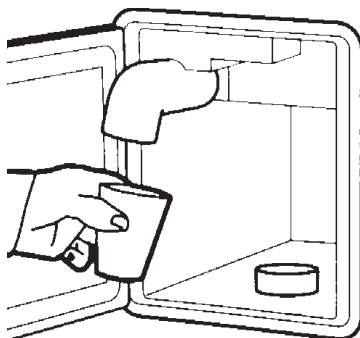
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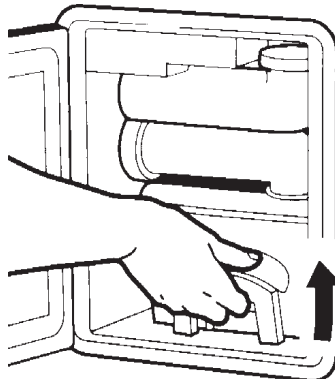
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13. If required make the toilet ready for use once again. Slide the waste tank into the toilet and close the access door.

## Storage

It is important that you follow the instructions below if you do not expect to use the Thetford toilet for a long period.

14. Open the valve blade by turning the handle on the toilet anti-clockwise. Press the blue knob until the water stops flowing into the bowl. Close the valve blade.
15. Open the access door on the outside of your motorhome and turn the water filling funnel outwards. Remove the cap and



empty the water filling funnel by turning it a quarter turn anti-clockwise.

16. Remove the waste tank and empty this at an authorised waste dump. Follow the instructions for cleaning and maintenance.
17. Replace the waste tank and open the valve blade by moving the handle on the toilet to the left.

## Cleaning and Maintenance

The toilet should be cleaned and maintained regularly, depending on the amount of use. To clean Thetford toilets, we advise using water and Thetford Plastic Cleaner.

**Note:** Never use household cleaners (bleach, solvents or other powerful cleaning agents). These may cause permanent damage to the seals and other toilet components.

### *Toilet:*

- \* Squirt Thetford Plastic Cleaner in the toilet.
- \* Flush the bowl with water and wipe down the rest of the toilet with a damp cloth.

**TIP:** For a really shining toilet, dry it with a soft dry cloth after cleaning.

- \* Clean seat and lid. The seat and lid can easily be removed. Lift the lid and seat together and pull upwards. After cleaning, replace the seat and lid by positioning the round pins above the holes and then pushing the lid and seat downwards.

### *Waste Tank:*

We advise a thorough cleaning of the waste tank once each season.

- \* Remove the mechanism from the waste tank by turning it anti-clockwise, as shown on the waste tank. Rinse the complete mechanism under a tap.
- \* Remove the cover plate from the automatic pressure release vent by prising it up using a screwdriver. Use one hand to push the automatic pressure release vent open, while holding the float of the automatic pressure release vent on the inside of the tank with the other

hand. Push the float upwards, turn the float a half turn and remove it from below. Remove the rubber seal that is under the float. Rinse the float and rubber seal under a tap. Replace the rubber seal and the float for the automatic pressure release vent in the same way.

The rubber seal in the toilet (the valve blade seal, the mechanism seal, the automatic pressure release vent seal and the cap seal) should be regularly treated with Thetford High Grade Seal Lubricant. This will ensure that the seals remain supple and in good condition. If the toilet is not to be used for any length of time, it is important to treat the seals with Thetford High Grade Seal Lubricant after cleaning.

**NOTE:** Never use Vaseline or any vegetable oil except olive oil. These may cause leakage.

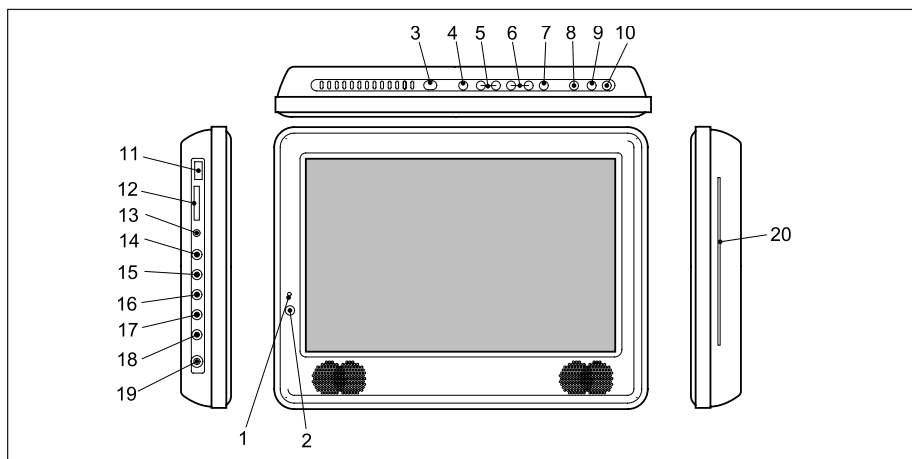
**N.B.:** The valve blade seal is a part of the toilet that is subject to wear. Depending on the extent and manner of service, after a certain period the seal will become less effective and must be replaced.

## Winter operation

You can use your Thetford cassette toilet as usual in cold weather, as long as the toilet is situated in a heated location. If this is not the case there is a risk of freezing. In that case we advise that the toilet is drained by following the instructions under 'Storage'.

For environmental reasons the use of antifreeze, such as that used in a car radiator, is not advised.

## LCD TV/DVD COMBI



### Front panel

1. Indicator (indicator is red when in standby mode, green when working normally).

2. IR sensor window.

### Top panel

3. STANDBY (to switch from standby mode to power-on mode).
4. SOURCE (select power source).
5. CH +/- (increase or decrease channel number/ to move selected menu item).
6. VOL +/- (increase or decrease volume/ characteristics).
7. SETUP (enter or exit setup menu).
8. Play/Pause button
9. Stop button.
10. Eject button.

### Right panel

11. USB jack.
12. MEDIA CARD socket.
13. 12V DC power input socket.
14. AV audio video input jack.
15. AV audio video output jack.
16. Headphone jack.
17. Headphone jack.
18. FM antenna output.
19. RF input terminal.

### Right panel

20. Disc in/out door.

The Avtex W102D 10.2" display screen has both digital and analogue tuners allowing you to watch TV and listen to radio stations with digital clarity and if you are in a poor reception area that does not benefit from a digital signal, you can still receive normal analogue TV and am/fm radio.

Watch DVD, play CDs or view pictures taken on your digital camera. The unit also has a USB interface to view and listen to information stored on a memory device.

The W102D operates on 12 volts DC, mains AC or optional rechargeable battery.

*Separate operating instructions are supplied with this equipment.*





## OMNI-STEP ELECTRIC STEP

The Warwick is fitted with an electrically operated side step. In the event of the step being left extended a buzzer, positioned under the dashboard, will sound (when the ignition is switched on) and the step will self-retract.

### Maintenance

Dirt and frost can prevent the step from operating properly. In this case the moving parts should be cleaned or defrosted. All points of movement are layered in maintenance-free bearings.

*Consult manufacturers literature for further maintenance details.*

## REVERSING CAMERA

A wide angle, colour reversing camera is fitted to your vehicle, adjacent to the high mounted rear stop lamp.

The monitor is clipped over the original interior mirror and is automatically activated when reverse gear is selected.

Take care to avoid hard objects from scratching the LCD surface of the screen.



## INTERNAL LAYOUT

### General

The Warwick Duo is designed as a two berth model, with an end lounge which easily converts into two single beds or a large double bed..

### Cab Seats

Both the reclining cab seats have full forward and rearward movement by releasing the catch on the front of the seat and sliding it to the required position.

### Accommodation Seating

The Warwick features a rear lounge with twin bench seats with lift up seat bases giving access to the under seat storage.

Please note that Auto Sleepers advise against the retrofitting of additional seat belts.

### Security

Passengers are reminded that it is a legal requirement to wear the seat belts provided whilst the vehicle is in motion.

### Table

A table with folding legs is provided with the vehicle. When not required this table should be securely stowed in the overcab storage area. When the table is needed, the legs should be folded out and the table placed where required.

**Caution:** The table must be stored when the vehicle is in motion.

### Kitchen Area

The kitchen area, on the offside of the vehicle, comprises a Spinflo cooker, which has three gas hobs, a single 230V AC electric hotplate and a storage cupboard below. Adjacent to this is a stainless steel sink and drainer concealed by a glass lid, which may be used as a chopping board. The sink is fed by a mixer tap mounted to the left of the sink. Beneath the sink/drainage there is a cupboard which gives access to storage space, including a slideout cutlery tray, with the electrical control box at the back. Each gas appliance is protected by its own isolation tap - these are found in the bottom

of this cupboard. They are coloured red with their own identifying symbol and are from top to bottom:

- Refrigerator
- Water heater
- Cooker

The water filter, with changeable cartridge, is also fitted in the bottom of this cupboard.

The Dometic RM7271 tilt-tolerant refrigerator is located beneath the kitchen unit worktop. A red warning light on the refrigerator will illuminate when it is operating on 12 volt.

Next to the fridge is another storage cupboard, with a folding door, which also contains the 230V Residual Current Breaker (RCB) and the Miniature Contact Brakers (MCBs). A pull out, folding ironing board is accessed via a handle at the side of this cupboard.

All kitchen shelves are coated with a plastic material which is easily cleaned should a spillage occur.

A high level unit above the kitchen area houses the microwave oven, and the cooker hood with extractor fan which vents to the outside of the vehicle. A switch next to the microwave oven controls the three downlighter lamps fitted into the ceiling above the kitchen area.

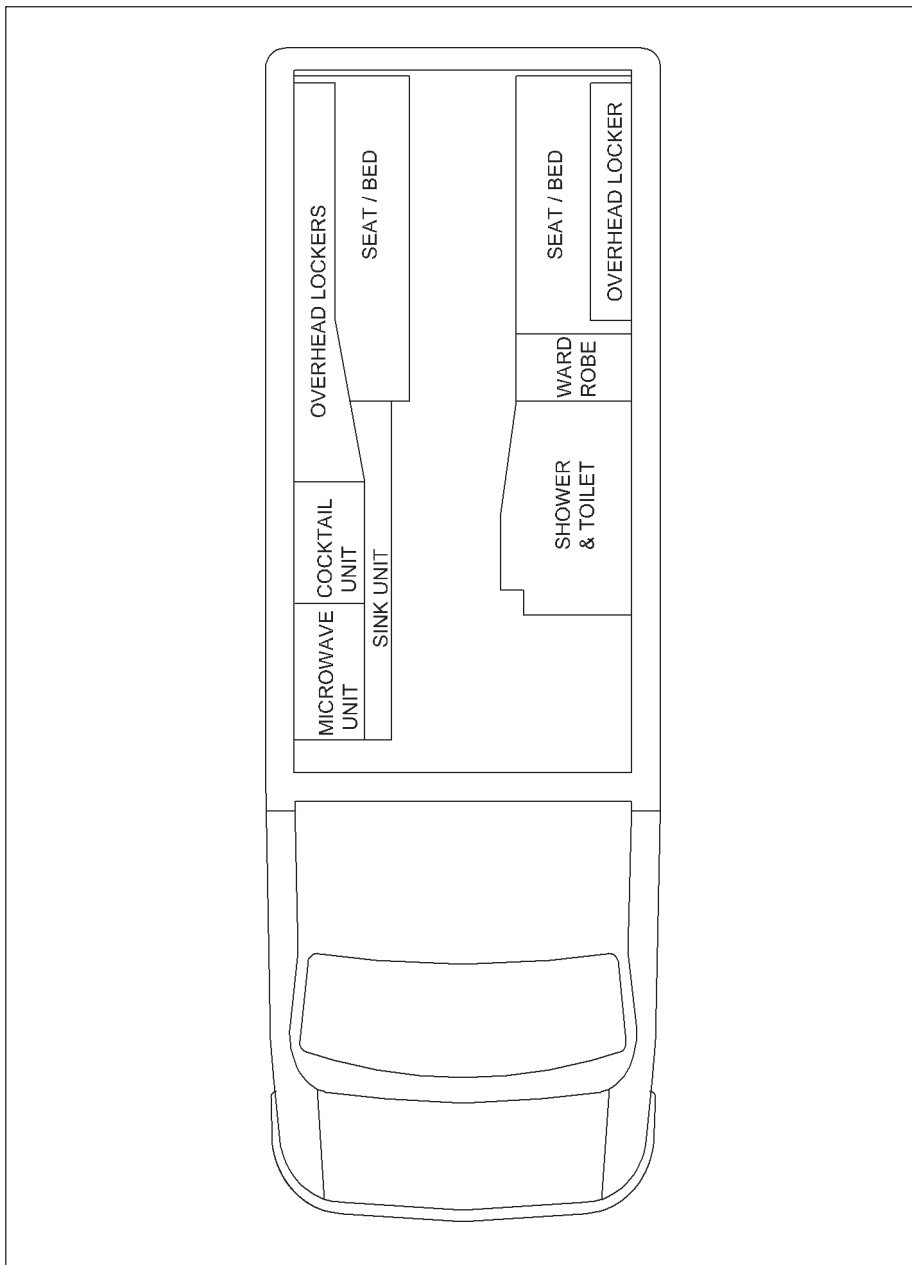
An adjacent high level locker with two glass fronted doors houses the crockery set and wine glasses for four people.

The vertical pillar above the sink unit houses a 230V mains socket, a 12V socket and the Truma heater controls on the front face. A 12V socket incorporating a TV coax connection is fitted on the lounge side surface.

On the bulkhead adjacent to the side entrance door is the electrical control panel which controls all the vehicle's electrical services. It incorporates a fresh water level indicator and master switches for the water pump and 12 volt circuits. Below this panel are two switches, one for the three main interior lights and one for the exterior awning light. A switch for the retractable side door step is located below the light switches.



## ARRANGEMENT OF EQUIPMENT (WARWICK DUO)





At the bottom of this bulkhead is a storage cupboard, and a combined light and switch to illuminate the entrance step area. The top of this bulkhead is fitted with a coat hanger with two hooks.

The corner of the shower compartment incorporates an umbrella storage rack, and a smoke alarm is fitted on the ceiling above.

A fire extinguisher is fitted on the bulkhead behind the driver's seat on the side of the cooker.

## Shower Compartment

The shower compartment consists of a Thetford cassette toilet, a drop-down hand basin with mixer tap, a shower head with mixer tap and a full length shower curtain. There is also a vanity unit with sliding mirror doors, a toothbrush holder and a towel rail. In the roof is a ventilator with hinged flyscreen and blind, along with a fluorescent light.

There is a blown warm air duct situated near the floor and a plastic shower mat prevents damage to the shower tray when not in use.

The dropdown hand basin may be removed, by lifting simultaneously upwards and forwards, for cleaning and retrieval of items (soap etc) that may have fallen into the catchment basin. The toilet is fed through its own integral water supply and is serviced from the nearside of the vehicle by opening the side door.

The inside of the shower compartment door is fitted with a mirror, two hooks and a lift up folding shelf incorporating a hairdryer handle slot.

## Wardrobe

The wardrobe is situated adjacent to the shower compartment and incorporates a full width hanging rail.

## Lounge Area

The lounge area is at the back of the vehicle and consists of two inward facing bench seats, with lift up cushions to give access to the underseat storage areas.

Lighting is provided by twin spotlamps, individually switched, fitted to the bottom of each overhead locker unit. There are also

pairs of LED downlighters fitted into the ceiling on each side of the lounge and these are controlled by a switch on each rear door pillar.

Radio speakers are fitted into each rear door, and the offside rear pillar contains a 12V power point. There is a warm air outlet and a 230V mains electricity socket fitted to the front panel under the offside seat, along with a large storage drawer at the rear.

Under the nearside seat is a lockable safe, set into the floor, which has a capacity of approximately 7 litres and is suitable for small valuables and documents. Fitted to the side panel is the isolation tap for the external gas socket. The front panel incorporates two doors giving access to the underfloor storage. On the rear nearside door is a fold up table which can be slid into position between the settees or single beds.

A flat screen digital TV on a swivel bracket is fitted beneath the offside overhead lockers and is visible from the lounge area.

## Storage

Storage is provided by the cupboards, lockers and within the settee bases. Additional storage is available in the overcab locker.

Heavy items must not be stored in any overhead locker, nor in any storage area from which they could come free and cause injury to the occupants of the vehicle. Ensure all cupboards are securely fastened before moving off (i.e. that the push buttons are in the 'locked' position).

Ensure any articles stowed below the cab seats will not come loose when the vehicle is being driven.



## SLEEPING ARRANGEMENTS

### Single beds

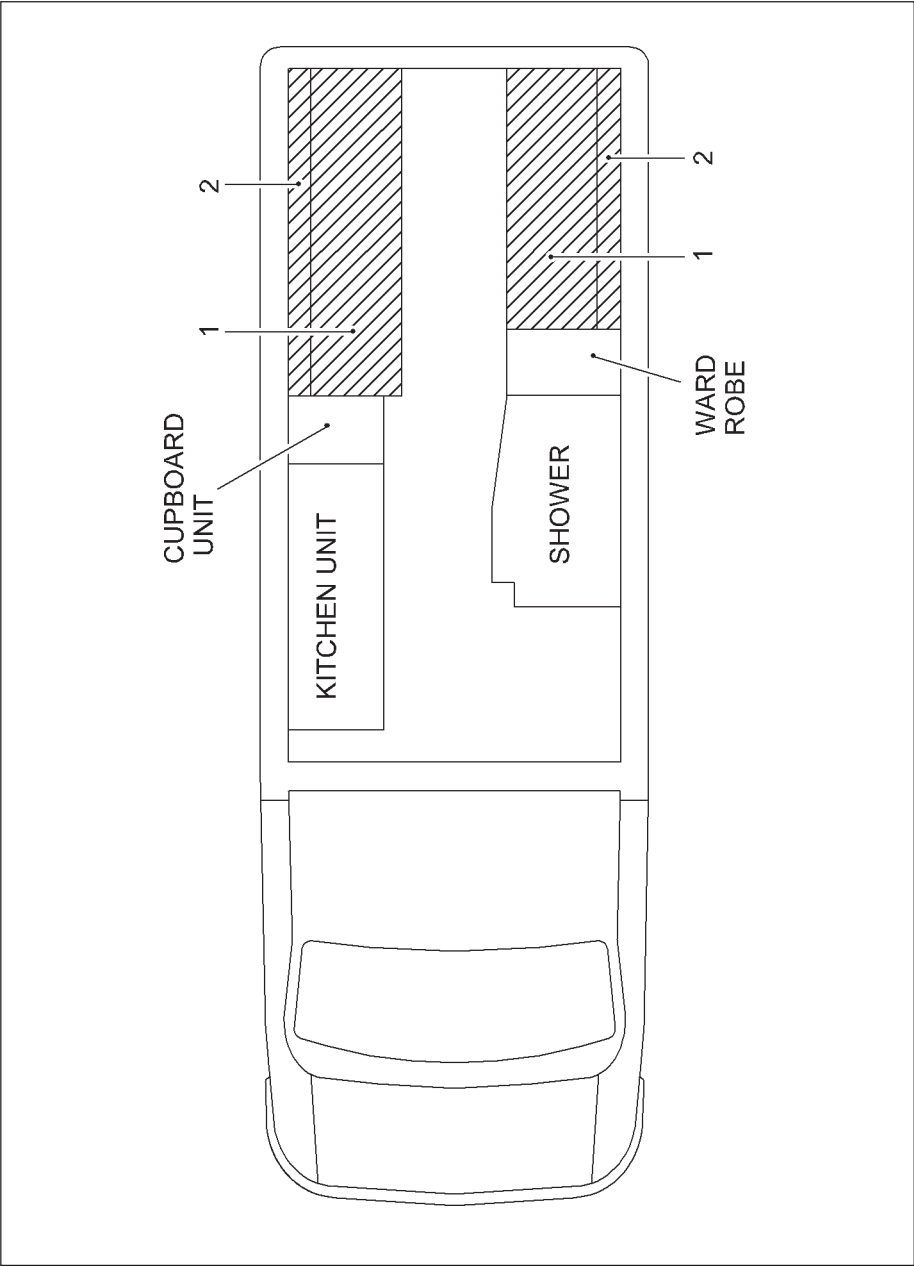
In order to gain maximum width of the seat cushion to make a single bed, stow the backrest cushion in the front of the vehicle.

### Transverse double bed

Slide out the seat base of each bench seat until they meet in the middle of the vehicle, and use the backrest to fill the space between the base cushion and the side of the vehicle.

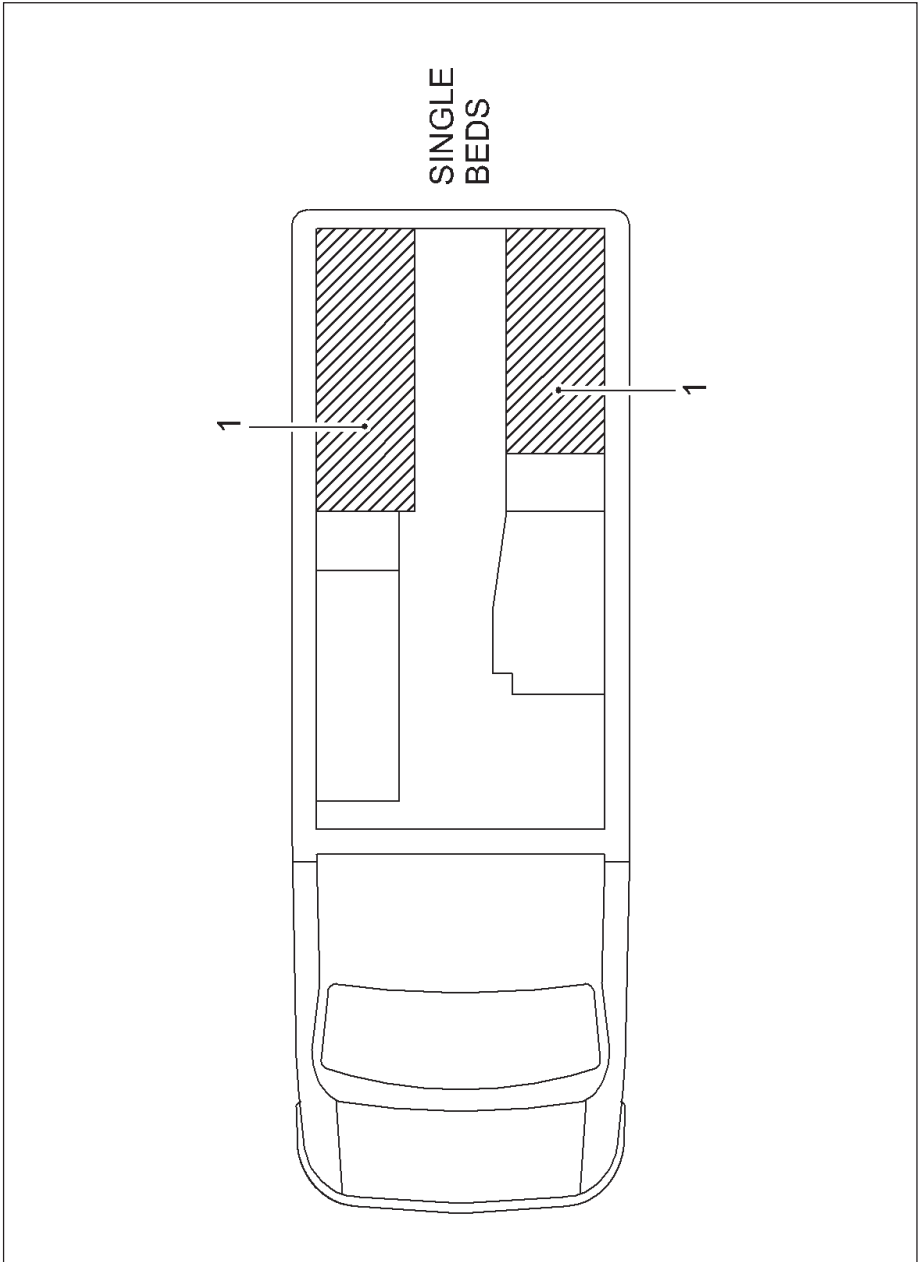


NORMAL SEATING ASSEMBLY (WARWICK DUO)



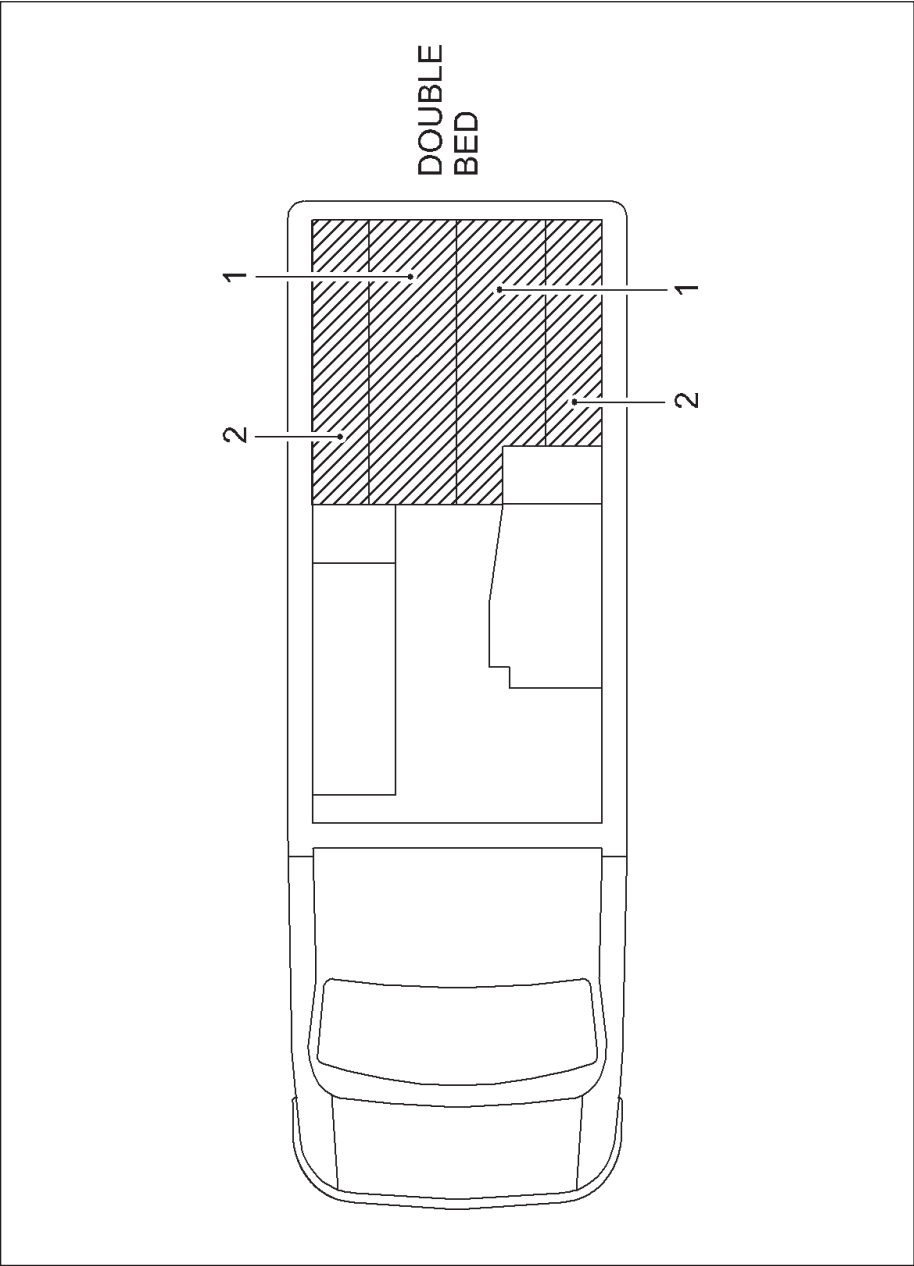


## SINGLE BED ASSEMBLY (WARWICK DUO)





DOUBLE BED ASSEMBLY (WARWICK DUO)







9-37



## EQUIPMENT ARRANGEMENT

### Ventilation

The Warwick Duo is fitted with three roof ventilators. A large Remis one is located above the lounge area with a Seitz Mini Heki fitted as standard above the kitchen area. A Remis ventilator with an electrically operated extractor fan is available as an option in this position.

There is a small MPK roof ventilator in the shower compartment.

### Remis Roof Light

The Remis roof lights are operated by a rotating handle which means they can be opened to any required position. They incorporate a separate sliding flyscreen and night blind which can operate even if the ventilator is left open.

### Mini-Heki Roof Light

To operate the Mini-Heki roof light, press the button and pull the handle to raise the cover. Use the slotted channels to hold the roof light open in the desired position.

### MPK Roof Light

The MPK roof light is fitted with a hinged cover which incorporates a roller blind and a fixed flyscreen. Opening the hinged cover gives access to the adjustment handles for the five way opening facility. Grasp the handles and push upwards to fully open or tilt in the required direction.

When the vehicle is being driven the roof ventilators should be fully closed. Wind noise may be reduced by closing the night blind.

The roof ventilators are designed to flow a certain amount of air even fully closed. Do not obstruct them - your safety depends on them.

### Insulation

All body panels, except the front doors and engine bulkhead, are insulated using fibreglass insulation material, giving protection against extremities of hot and cold, and, at the same time, minimising condensation.

### Stainless Steel Sink and Drainer

The stainless steel sink and drainer should only be cleaned with light detergent. Under no circumstances should bleach be used since this will react adversely with the stainless steel and may cause small holes in the metal. Immediately beneath the sink is a slide-out cutlery drawer. The chrome mixer tap has a small rubber end cap to eliminate water droplets marking the work surface whilst in transit. A waste bin is incorporated beneath the sink unit with a stainless steel spice rack fitted on the adjacent wall.

### Habitation Battery

This is located beneath the driver's seat. The battery is a 110AH 12V, low maintenance, leisure battery which should only require attention at the annual habitation service.

If a replacement habitation battery should be required then it is important that the replacement be of the same type and specification as that originally fitted.

**WARNING: Switch off all appliances and lamps before connecting or disconnecting the habitation battery.**



## Electrical - General

Two 230V AC sockets are fitted, more suitable for medium demand components such as televisions and hairdryers. Safety/ overload protection is provided by the MCB in the sink unit cupboard. A further 12 volt socket and TV coaxial plug is provided; the coaxial cable is fitted to the rear of the coaxial socket and is connected to the standard fit TV aerial.

The mains hook up cable, provided as standard with the vehicle, is stored under one of the seats.

A strip LED awning light is provided above the side entrance door.

## Factory Fitted Options

The following optional items are available at the time of build:

- Cycle rack.
- Awning.

## Retrofit Options

Whilst this list is not comprehensive, below are listed suitable retrofit options. Contact either your local Auto-Sleeper dealer or the Motorhome Service Centre, Willersey for further details.

- Cycle Rack. The Fiamma 200D or 200DJ is recommended for fitment to the offside rear door.
- Top Box. A specific top box is not recommended because of the small amount of suitable space available on the roof. If a box is fitted it should be bolted through the roof, and the weight of it and its contents must not exceed 50kg.
- Air Conditioning. The Dometic B2200 is recommended for air conditioning in the habitation area.
- Back Box. The Fiamma Ultrabox 180 or 320 would be suitable, and is fitted to the cycle rack.
- Rear Ladder. The Fiamma Deluxe 6 DJ may be fitted to the nearside rear door to combine with the 200 DJ cycle rack.
- Towbar. The standard Peugeot towbar is recommended.





## GENERAL

In order to keep your Auto-Sleeper in first class condition, periodic maintenance will be required to both the bodywork, windows, upholstery and other parts of the conversion. This maintenance should be carried out as follows:

### Servicing

Servicing of the conversion is the responsibility of your local franchised Auto-Sleeper dealer to whom all queries should be referred. Your local base vehicle commercial dealer should carry out servicing of the base vehicle.

## GLASSFIBRE BODYWORK AND ACRYLIC WINDOWS

### General Cleaning

At regular intervals, you should wash the fibreglass bodywork with a recognised cleaner for use on fibreglass gel coats. Should marks remain, use a cleaner with chemical and abrasion agents formulated for use on gel coats.

### Discolouration

Fading or discolouration of the gel coat is a natural ageing process caused by ultraviolet light. To overcome this, use a mild abrasive, which removes a thin layer of the discoloured surface. This will restore the bodywork to its original colour and surface lustre. Since discolouration develops gradually, it should not be necessary to carry out this procedure more than every three years. Frequent use of abrasive materials can reduce the thickness of the gel coat, to a potentially harmful extent.

### Removing Scratches from Bodywork

Scratches can be removed from both gel and painted surfaces. The method depends upon the depth of the scratch, as care has to be taken to avoid penetrating the paint or gel coat. Very fine, hairline scratches can be removed by rubbing across the line of the scratch with rubbing compound. Slightly deeper scratches should be lightly wet sanded first using very fine (1200 grit or finer) abrasive paper. Rubbing compound will then

remove the flattening marks created by the abrasive paper. For deep gouge type scratches, where the paint or gel may have been penetrated, you should first seek the advice of your supplying Auto-Sleeper dealer.

### Removing Scratches from Acrylic Windows

All windows, except the chassis cab and Luton, are manufactured in acrylic. Over time these become scratched and their clarity impaired. An Acrylic Window Polish removes unwanted scratches and blemishes leaving a clear, haze free finish. Minor scratches can be polished out directly.

### Recommended Materials

*G3 Paste Compound:* This is a cutting compound and polish, recommended for use on painted surfaces and GRP. It is ideal for removing the traffic film that builds up on glassfibre coachwork and not only restores it to its former glory, but adds a high level of polish as well.

*G10 Extra Fine Grade Liquid:* This is again ideal for polishing surfaces and removes swirl marks and very fine scratches. It is less abrasive than G3 yet has the same polish properties and cleans and restores discoloured surfaces. It is ideal for use on dark colours.

*Black Top Hand Glaze:* This is ideal for use on stains, vinyls, body mouldings and provides a long lasting high gloss finish. It is resistant to car wash and abrasive solvents and is easy to apply. Economical in use, only a small amount is needed to give a very fine finish.

*Finishing Cloths:* These are very fine grade cloths, woven and thus easily washable that are recommended by Farecia for use with their materials.

The above can be purchased from our Service Centre, Willerly (01386) 853511.



## UPHOLSTERY MAINTENANCE

### Cleaning

Upholstery should be brushed or vacuumed regularly. Fabrics should be wiped every six to eight weeks with a lint free cloth and fabric cleaning fluid. Velour materials may be dry-cleaned.

### Fabric Care

Fabric snags caused by sharp objects such as toys, nails, etc., should be trimmed off immediately. Never attempt to pull them off since this could cause the snag to run.

Whenever possible, avoid exposing the upholstery to direct sunlight which might eventually cause the colour to fade.

Fabrics with a velour type pile finish will develop crush marks in use - this is unavoidable and does not affect the quality of the product in any way.

### Stain Removal

A proprietary dry cleaning fluid will remove most household stains. However, stubborn stains, such as coffee, wine or ice-cream may need pre-treatment with a mild soap and distilled water.

Small marks in velour type fabrics can usually be removed by stroking along the pile using a small brush and warm water.

We strongly recommend that before commencing any treatment an inconspicuous piece of material is tested for colourfastness and shrinkage. If in doubt, please contact a professional dry cleaning company. Do not apply cleaning solvents to velour piping, otherwise the flock will be removed.

### Work Surfaces

Laminated work surfaces are fitted to the tops of all furniture units. Whilst these are hard wearing, hot pans should not be placed directly on these surfaces, since damage may result.

## STAINLESS STEEL COMPONENTS

### External

In the event of discolouration of the stainless steel ladder, this should be removed with T-Cut or any other mild abrasive and the surface protected with WD40 or a similar product.

### Internal

Do not clean stainless steel fittings, i.e. splash plate and sinks with bleach since this reacts with the stainless steel and may lead to corrosion.

### Furniture

Furniture should be cleaned with a proprietary furniture polish periodically. Any watermarks that may occur on the hardwood edging of the furniture units should be removed by use of fine grade wire wool and furniture wax.

Heavy stains may need to be sanded out and the edging re-polished with a proprietary varnish (Ronseal etc.). The high gloss finish is achieved by using wire wool and wax.

## GAS INSTALLATION

All gas vents and flue pipes should be periodically checked for damage and should be kept free from dirt.

Blocking of vents or flues is extremely hazardous and should be avoided at all times.

### Gas Appliance Igniters

It is advisable, periodically, to check visually the igniters on hobs, grills and ovens are sparking correctly.

### Annual Inspection

The gas installations should be inspected annually by qualified personnel. If in doubt contact your supplying Auto-Sleeper dealer. Modifications to the gas systems should not take place unless carried out by qualified technicians.



## SEAT RESTRAINTS

**WARNING:** In the event of any impact of 25 mph or over in which seat belts have been worn, they must be replaced before the vehicle is used again.

## WATER SYSTEM

### Fresh Water Tank

At regular intervals, and at least every three months, the fresh water system should be flushed through with fresh water. Furthermore it is advisable that prior to using your Auto-Sleeper, the fresh water system is thoroughly flushed with fresh water.

### Waste Water Tank

Since the waste water tank can hold foreign matter, it should be regularly flushed with fresh water. To prevent odours working back through the shower and sink outlets, flush the waste tank through with a small amount of mild disinfectant.

Depending on the use of the waste tank, it is possible that this will collect solid waste matter, which in some instances may build up and block the waste tank outlet tap. In this case it will be necessary to drop the tank for cleaning. Access is through a large diameter fitting in the tank top. Once removed this will allow the tank to be flushed out in an inverted position and all solids removed.

## WINTERISATION

### General

This section contains information on the winterisation of your Auto-Sleeper, particularly when you may wish to lay up your vehicle for the winter months.

### Water System

The water system should be fully emptied and the drain taps on both the fresh water tank and waste water tank left in the open position. Likewise, all internal taps should be left open and the water pump run until the last traces of water have come out of the taps. Purely as a precaution, against very severe freezing conditions, the water filter that is attached to the water pump on the outlet side should be removed and cleared of all water. In doing so it will give you the opportunity of cleaning it, if necessary, ready for the coming season. Remove all sink plugs to allow the water system to breathe.

Flush fully the waste water tank to remove any excess debris and waste material. Flush through again with disinfectant as part of the final drain. Leave drain tap open.

### Upholstery

We advise that any detachable upholstery is removed and taken indoors during prolonged winter storage, particularly detachable upper bed mattresses and scatter cushions.

### Curtains/Blinds

To prevent uneven bleaching, and possible excess sunlight onto the furniture and fabrics, we recommend that either the curtains or blinds are left drawn.

### Refrigerator

Leave the refrigerator door open, on its intermediate lock position; this will allow the refrigerator to breathe and prevent any unpleasant odours in the storage department.

### Ventilation

There is fixed upper and lower ventilation in your Auto-Sleeper which is built-in in the interests of safety. There is therefore no need to leave any windows or roof ventilators ajar -



indeed the roof ventilators have sufficient fixed ventilation to allow the interior of the vehicle to breathe satisfactorily.

## Exterior

Fit, where appropriate, the Electrolux winter covers to the fridge ventilators. Give your Auto-Sleeper a good wash and polish before laying up, and apply a small film of protective oil to the stainless steel roof rack, ladder and any other external polished metal components.

## Electrical

Turn the electrical system off at the control panel.

Peugeot recommend that if the vehicle is to be parked up for a period of more than one month then it is advisable to disconnect the main vehicle battery. For full instructions on the correct procedure refer to the Peugeot handbook supplied with the vehicle and look for the section covering the battery. If this advice is followed, bear in mind that the remote central locking will not function, although it will still be possible to unlock and lock the doors manually using the key.

To maintain the vehicle battery in good condition it is recommended that it is fully charged prior to storage and then recharged every 3 months.

## Windows

Open all windows fully. Check all window seals are intact and shut firmly. Ensure locks and over centre catches are applied as appropriate.

## Automotive

Follow the advice laid down by the base vehicle manufacturer. In particular,

- Secure the vehicle using chocks. Release the handbrake to prevent the brake linings from seizing on.
- **Increase the tyre pressure (by approximately 2 bar above the standard pressure) to prevent the tyres from becoming flat.**

**WARNING: Do not exceed the maximum pressure noted on the sidewall of the tyre.**

Alternatively, jack up the vehicle to relieve the load on the tyres.

- Cover the tyres to protect from sunlight, as they will deteriorate rapidly in ultra-violet light. A light proof cover will help to prevent cracking of sidewalls and premature ageing.
- Check coolant for antifreeze protection, correct as required.
- Check windscreen and headlamp cleaning systems for antifreeze protection, correct as required.





## TROUBLESHOOTING

The following are a series of fault finding charts to which you should refer in the event of problems you may have regarding 230/12V, LPG and water. This should be used as a guide only, and in the case of an electrical fault, where a fuse has blown or an MCB tripped out, the fault must be located before replacing the fuse. If a fault is suspected with the LPG system, consult a CORGI registered technician.

If in doubt consult a qualified technician or your local Auto-Sleeper dealer.

### 12V TROUBLESHOOTING CHART

Symptom	Cause	Remedy
<b>Habitation 12V does not operate</b>	Main 50A fuse blown	Check/Replace
	Battery Discharged	Recharge
	Switch on control panel in off position	Switch to on
	Vehicle ignition 'on'	Switch 'off' ignition
<b>Habitation battery not charging</b>	Main 50A fuse blown	Check/Replace
	Relay fault	Refer to dealer
	Contacts dirty/loose on battery terminals	Clean and check for tightness
	Poor earthing	Check earthing to chassis point
<b>Battery does not hold its charge</b>	Failed battery	Check cells with hydrometer change electrolyte if necessary
	Current being drawn	Check all appliances are off when not in use
<b>Battery discharges over a short time with appliances operating</b>	Poor battery cell condition	Check cells with hydrometer
	Failed battery	Change battery
	Battery not fully charged	Fully recharge battery
<b>No power to one or more 12V appliances</b>	Circuit fuse blown	Find fault and replace fuse with same rating
<b>Lights dull/only one tube illuminating</b>	Low battery charge	Check battery
	Faulty light unit/tube	Replace/Check
<b>Water pump not operating</b>	Switch on panel 'off'	Switch it 'on'
	Pressure switch on pump not operating	Refer to dealer
	Fuse 4 blown	Find fault and replace fuse with same rating
<b>No power on 12V socket outlet</b>	Fuse 7 blown	Find fault and replace fuse with same rating
	12V plug incorrectly connected/wired	Check plug

**12V TROUBLESHOOTING CHART (continued)**

Symptom	Cause	Remedy
<b>Water Heater not operating/cuts out</b>	Fuse 3 blown	Find fault and replace fuse with same rating
	Low battery charge	Recharge battery
	Unit fault	Refer to dealer
<b>Cooker ignition not operating</b>	Fuse 3 blown	Find fault and replace fuse with same rating
	Spark unit fault	Refer to dealer
	Fault on cooker unit	Refer to dealer
<b>Fridge gas ignition not operating</b>	Fuse 3 blown	Find fault and replace fuse with same rating
	Ignition control switch fault	Refer to dealer
<b>Fridge ignition switch flashes but gas does not ignite</b>	Fault on fridge unit	Refer to dealer
<b>Ignition can be heard to be sparking but no flashing on fridge switch</b>	Faulty fridge ignition switch	Refer to dealer
<b>Fridge does not operate on 12V when engine is running</b>	Fuse 8 blown	Find fault and replace fuse with same rating
	Fault on fridge relay	Refer to dealer
	Fault on fridge unit	Refer to dealer

**230V TROUBLESHOOTING CHART**

Symptom	Cause	Remedy
<b>230V system inoperative</b>	No site power	Check site supply
	RCD/MCB switches tripped out	Reset circuit breakers
<b>RCD/MCB keeps tripping out</b>	Fault on 230V supply	Check supply including polarity
	Faulty appliance	Turn off all appliances, reset circuit breakers, turn on appliances until fault occurs. Isolate faulty appliance
	Overload on current consumption by appliance	10A maximum available do not use appliance
<b>Water heater does not operate on 230V</b>	No power	Switch on MCB isolator switch and check 6amp MCB is on
<b>Water heater does not operate on 230V</b>	Overtemperature trip activated	Reset thermal cut-out (refer to operating instructions)
<b>Battery charger does not operate</b>	Charger switched off	Switch on MCB isolator switch and check 6amp MCB is on
<b>Refrigerator does not operate on 230V</b>	Switch on refrigerator thermostat dial not 'on'	Check position of thermostat dial
	Element fault	Refer to dealer
<b>Cooker Hotplate</b>	Not heating up	Make sure 230V is switched on. at isolator
		Check trip switch
		Check 10amp MCB is on

**LPG TROUBLESHOOTING CHART**

Symptom	Cause	Remedy
<b>Appliance will not light</b>	No gas	Check isolation valve is open
	Low battery (auto ignition)	Charge battery
<b>Appliance lights but goes out immediately the FSD override is released</b>	Flame supervision device (FSD) is not functioning correctly	Refer to dealer
<b>Odour</b>	Gas leak	Turn off the gas at the isolation valve and do not use the gas system until the problem has been rectified
<b>Yellow flame</b>	Lack of primary air. please note yellow tipping to the flame is normal	Refer to dealer
<b>Orange flame</b>	Particles of dust or dirt in the mixing tube being carried through the burner ports	Reduce the amount of dust in air
	Burner ports partially blocked	Refer to dealer
<b>Floating flame</b>	Lack of secondary air	Check all vents are clear (air inlet to vehicle)
	Blocked retention ports	Check retention ports are clear
	If in an oven	Check the flue way is clear

**WATER TROUBLESHOOTING CHART**

Symptom	Cause	Remedy
<b>Continuous running of water pump</b>	1. No water	1. Fill tank
	2. Major leak	2. Switch off immediately and check system
<b>Intermittent operation of water pump</b>	Minor leak in water system	Check push fit joints
<b>Intermittent operation of water pump 20 second cycle (approx).</b>	Water pump pressure release valve reasserting itself	No action - part of pump design
<b>Water pump does not operate</b>	Fuse 4 blown	Find fault and replace fuse with same rating
<b>Water gauge does not operate</b>	Probe fault	Refer to dealer (check probe connections)
<b>No hot water (mains system)</b>	Water heater tripped	Check and press re-set button
<b>No hot water (gas system)</b>	Gas module not lighting	Refer to dealer
<b>No hot water (gas system)</b>	Igniter not working	Check 12V switched on
<b>Slow drainage from sink/shower tray</b>	Blocked breathers in waste tank	Drop tank and clear breathers
<b>Tip-up handbasin slow to drain</b>	Blocked drain hole	Remove basin and clear
<b>Unsatisfactory operation of water pump</b>	Filter blocked	Clean filter



**DATA RECORD**

We suggest that you record key details in the spaces below should you accidentally mislay your keys or other vital documentation.

Vehicle Type .....

Vehicle Model .....

Auto-Sleepers Production Number .....

Keys .....

Ignition Key .....

Door Key (if applicable) .....

Fuel Filler (if applicable) .....

Water Filler .....

Gas Compartment Key .....

Toilet Compartment Key .....

Alarm Code (if fitted) .....

AA/RAC/etc. Membership Number .....

Radio Security Code .....

Supplying Dealer Contact Number .....



### **AUTO-SLEEPER DEALERS**

To find your nearest Auto-Sleepers dealer please go to [www.auto-sleepers.co.uk](http://www.auto-sleepers.co.uk) and click on 'Find a Dealer'.



## RECOMMENDED ANNUAL SERVICE CHECK FOR MOTOR CARAVAN BODIES AND CONVERSIONS

It is recommended that the annual service is carried out by an approved motorhome service centre.

### Introduction

This entire section offers guidelines for the checking of a motorhome's habitation area and to ensure continual compliance with EN1646-1.

It does not cover any part of the base vehicle, although there may be minor overlapping (such as tyre pressures, cab seats, internal lights, battery and windows) in a van conversion. The base vehicle must be serviced in accordance with the chassis manufacturer's instructions.

Reference should also be made to:

- Any owner's manual or equivalent supplied with the vehicle by the motorhome converter.
- Appliance manufacturer's instructions.
- Driver's handbook or equivalent supplied by the chassis manufacturer.
- A vehicle is accepted for service at the dealer's discretion.
- Any defects, repairs, adjustments, cleaning or lubrication required will be noted on the checklist. The customer's approval will be obtained before any work is done.

Not all of the equipment mentioned in this manual is fitted as standard to every motorhome.

This guide is published as an aide de memoire for dealers. Any work carried out following the check, and the sufficiency of the work in the check itself, is subject to the contract between the customer and the dealer.

## SECTION 1 - BODY MOUNTING

### Body to Chassis

Examine all fixings retaining the body to the chassis - this may be direct or through a sub-frame. Where practical, all fittings should be checked to ensure they are all present and correctly secured.

### Body to Cab

Examine joint between body and cab for signs of movement and soundness of sealing media.

### Body Retention (dismountables)

Check serviceability and tightness of body retaining gear.

Check serviceability of body support struts and mountings. (Note: whether it will be necessary to demount the body to check the body supports must be agreed between dealer and customer).

## SECTION 2 - WINDOWS

### Windows

Check window glazing rubber or sealing for cracks and general condition. Check for satisfactory operation and closing.

Check fixing of top hinge rail on top hung windows.

Check for good weather seal when window is closed and latched.

Check catches and stays for satisfactory operation.

## SECTION 3 - DOORS

### EXTERNAL DOORS

Not including base vehicle doors.

### Security:

- Check that hinges and catches are satisfactory and that, when latched, doors are held securely shut.
- Check that the keys or internal latches lock the doors correctly.
- Check that any device fitted to hold a door in the open position is satisfactory.



## Sealing:

- Check all door seals for cracking and general condition.
- Check correct closing to give a weather-tight seal.

## Childproof Lock:

- Where a door is fitted with a childproof lock check that an appropriate warning notice is fixed adjacent to the door. Appropriate warning notices are available from motorhome manufacturers.

## INTERNAL DOORS

### Security:

- Check that hinges and catches are satisfactory and that, when latched, the door is held securely shut.

### Safety:

- Check that any device fitted to hold a door in the closed position can be operated from both sides to open the door in an emergency.

## SECTION 4 - ATTACHMENTS TO CHASSIS OR UNDERBODY

### Corner Steadies

Check that attachments to chassis are secure.

Ensure steadies work freely and satisfactorily.

Lubricate screw to ensure correct operation.

### Folding/Retractable Steps

Check that step pivots are satisfactory and not worn. Check that, when closed, the retaining mechanism holds the step securely. If fitted, check device is working.

### Underfloor Water Tank Mountings

Check mounting frames are secure to body. Any fastenings that require releasing to remove the tank should be free of rust and operate freely. (Removal, flushing, cleaning and replacing of tanks will be carried out at the prior request of the customer or will be done subsequently with other work).

## Spare Wheel

Remove spare wheel. Check for damage. Check tyre pressure.

Check mounting frame for security to body and for secure retention of spare wheel.

## Wheel Boxes

Check for damage, corrosion, water seepage, signs of tyre scrubbing.

## SECTION 5 - ATTACHMENTS TO BODY EXTERIOR

### Roof Lights

Check security, general condition, and that sealing has not deteriorated.

### Roof Racks and Ladders

Check security to body and general condition.

Check roof for damage adjacent to rack.

### Mouldings, Trims

Check security. Check sealing has not deteriorated.

### Flue Terminals, Air Vents

Check security. Check sealing has not deteriorated.

Check that these are not blocked.

## SECTION 6 - INTERNAL

### Body Seepage Check

Examine for moisture/water staining of areas under windows, at side of roof and at corners, which could indicate water seepage problems. A moisture meter should be used where appropriate.

### Furniture

Check furniture is securely fixed.

Check door hinges, catches and stays for satisfactory operation.

### Dinette Seats/Beds

Check seat bases for security of fixings and for damage.

Make up beds according to manufacturer's instructions and check for rigidity and safety.





### Upper Bunks

Check there is a secure means of access to upper bunks and that, where applicable, protection against falling out and entrapment is provided.

### Curtains/Blinds/Nets

Check track is secure and curtains draw freely without snagging.

Check blinds and/or nets for correct operation.

Check flyscreens in roof lights and air vents.

### Cab Seats

Where cab seats form part of the living area and/or bed layout they should be checked for security of attachment, smooth and easy operation of seat slides, swivels and seat back operation.

### Fire Extinguisher

Check condition and expiry date. If an extinguisher is not fitted, inform the customer of the advisability of such equipment

### Fire Blanket

Check position (should be near cooker).

If one is not present, inform the customer of the advisability of such equipment.

### Advice to Occupiers/Warning Notice

Check presence and condition and advise customers accordingly.

The wording and layout of the notice should be set out as follows:

### ADVICE TO USERS

#### VENTILATION

Do not obstruct the ventilators which are fitted; your safety depends on them.

#### IN CASE OF FIRE

1. Get everyone out.
2. Turn off outside gas valve and/or oil valve (if fitted).
3. Disconnect the mains electricity supply.
4. Raise the alarm and call the fire brigade.
5. Tackle fire if safe to do so.

#### FIRE PRECAUTIONS

**Children:** Do not leave them alone.

**Means of Escape:** Make sure you know the location and operation of the emergency exits, keep all escape routes clear.

**Combustible Materials:** Keep them clear of all heating and cooking appliances.

**Fire Fighting:** Provide, at least, a 1kg power fire extinguisher, that complies with BS5423 by the main exit door, and a fire blanket next to the cooker. Make yourself familiar with the instructions on your fire extinguisher and the fire precaution arrangements on the caravan park.

### Portable or Open Flame Heating Equipment

Check for its presence. The customer must be advised against its use.



## SECTION 7 - ELEVATING ROOFS

### Solid Side Wall

Check sides and end panels fold up and down correctly, that they seal against each other where appropriate and that retaining mechanisms are satisfactory. Check all hinges for security and freedom from strain.

### Locking of Roof

It is important to ensure that, when the roof is in the travelling position, it is safely and positively locked down. Any locking retaining mechanism should be carefully examined.

## SECTION 8 - GAS SYSTEMS

### Cylinders, Regulators and Feed Hoses

Establish that the cylinder and feed hose is compatible.

Since the introduction of BS EN1949 the gas pressures for Butane (blue) cylinders and propane (red) cylinders have been harmonised across Europe. The gas system pressure is now 30mbar for both gases.

The gas regulator is now fitted as standard equipment by Auto-Sleepers. Your supplying dealer will need to supply you with the correct hose compatible with the cylinder to be fitted.

Check cylinder compartment vents and gas drop hole in floor are free from obstruction.

Check seals on internal doors.

### Hose and Piping

Check any flexible hose is of an approved type. Check its condition and any evidence of cracking.

The maximum permissible hose length is 400mm, longer hoses should not be used. The hose length is the length of the flexible portion of the hose assembly. Do not use external cylinders and or extension hoses.

Check piping for condition, damage and correct support.

Carry out an overall leak test.

### Appliances

In general, the checking of gas appliances can be divided into the following:

1. Cleaning.
2. Operation of controls.
3. Correct flame structure.
4. Flues.
5. Flame failure device.
6. Security.

### Cleaning

- Where appropriate, remove cover(s) to gain access to heat exchanger. Clean away any fluff or foreign matter. Reassemble and test. Clean flame viewing window.

### Controls

- Check that all knobs etc. work smoothly and are secure on their spindles. If gas taps require greasing to ease stiffness, use only approved LPG grease. Check that appliances can be brought into service using the normal controls.

### Correct Flame Structure

- Check that all pilot flames burn quietly and clearly.

*Refrigerator:* With the refrigerator gas control turned to maximum, the colour of the flame should be predominantly blue.

*Instantaneous Water Heating:* The main burner flame should be of even height and blue in colour. A flame burning yellow will allow sooting to occur.

*Ovens:* The oven flame should burn quietly and be of even height, mainly blue/green in colour. If the gas is propane, the flame will normally develop yellow tips as the burner heats up. If the gas is butane, a small amount of yellow tipping will be seen immediately after lighting, increasing as the burner heats up.

*Grill Burners:* It is normal for the flames on this type of burner to develop yellow tips as it heats up, particularly on butane.

*General:* A flame lifting away from the burners is an indication of too high a



pressure, although it may happen with grill burners whilst the frets are heating up. A yellow flame will cause sooting and is an indication of too low a pressure. Providing the regulator and piping have been checked and found satisfactory, the above faults should not appear.

### Flues:

- Flues should be examined for security of fixing and for correct attachment to appliances and flue terminals. They should be free from damage and corrosion. Check for leakage of flue gases into the vehicle.

### Flame Failure Device (FFD):

- Where fitted, FFD should be checked to ensure satisfactory operation. After the appliance has been successfully checked, allow time for the thermocouple to cool. Attempt to relight the appliance by turning it on without pushing in the gas control knob. (Do not override the FFD). If appliance does not light, FFD is satisfactory.

### Security:

- Check appliance is securely fixed to the vehicle/furniture and will be free from rattles. Where applicable, check that water pipes are satisfactorily attached with no sign of leakage.

### Protection of adjacent surfaces:

- Check that surfaces adjacent to open flame cooking appliance have adequate protection.

### Inspections:

- It is recommended that inspections are carried out by a qualified fitter trained to, for example, CORGI (Confederation of Registered Gas Installers) or Calor standards.

## SECTION 9 - WATER SYSTEM

Before operating the water system, a visual check of the following items may show up an obvious leak source...

### Fresh Water Tank/Container

Check condition, fill tank and check for leaks.

Check the external filter and filter pipe to tank.

Check for satisfactory venting.

Check condition and presence of filter cap.

### Waste Water Tank

Check drain tap is clear and working.

Check condition and presence of drain hose. (The water tank will be drained, flushed, cleaned and charged with a measure of toilet fluid/disinfectant at the prior request of the customer).

### Filter Pump

When applicable, remove filter and replace.

Check the in-line pump for security and condition. Remove the submersible pump from tank, check condition.

Check pump inlet and outlet are clear and not obstructed.

Check delivery hose and electric cable are secure and satisfactory.

### System Check

Operate pump. Check all piping for leaks.

Operate taps and shower. If a hot water system is fitted, it can be checked for leaks etc., using cold water. (Note: Aerated water from tap could be due to a leak on the suction side of the pump).

### Waste Water System

With water running through the drain pipes, check for leaks and satisfactory draining of water from sinks etc.

### Couplings and Fluids

Check that the appropriate markings are used - blue for fresh water, grey for waste water. Ensure a sealing off cover is supplied for each coupling.



Check that filler positions are designated “petrol”, “diesel” or “water” as appropriate.

### **Toilet Waste Tank**

Check that any fixed tank intended to receive discharge from a toilet is fitted with either a level or full indicator.

## **SECTION 10 - ELECTRICAL SYSTEMS**

### **Extra Low Voltage 12 Volts (excluding vehicle)**

#### *Battery/ies:*

- Check battery/ies for condition.
- Check connections, wires, fuses and relays appertaining to the habitation electrics.

#### *Wiring:*

- Examine all visible wiring.
- Check all connections and joints are sound and satisfactory.

#### *Fuses/Fuse Holders:*

- Ensure that fuses and fuse holders used to protect the habitation electrics are satisfactory and that fuse ratings are compatible with the circuit appliances being protected.

#### *Appliances:*

- Inspect all appliances for damage, signs of overheating and secure fixing.  
Function test all appliances.

### **Mains 230 Volt System**

It is recommended that the inspection and certification of the 230 volt system be carried out by a qualified electrician who is an approved contractor of the NICEIC (National Inspection for Electrical Installation Contracting) or in membership of the Electrical Contractors Association 16th Edition Wiring Regulations.

## **SECTION 11- VENTILATION**

### **High Level**

Check all high level ventilators, including roof lights, are free from obstruction and allow a free flow of air.

### **Low Level**

Check all low level ventilators are free from obstructions and allow a free flow of air. If the ventilator is manually adjustable then ensure the mechanism is free and operating correctly.



### **AUTO-SLEEPERS SERVICE CENTRE ANNUAL HABITATION CHECK**

#### **Introduction**

It is recommended that every 12 months the habitation side of your motorhome is inspected by qualified technicians. Attached to this brief, is a list of all the points that are checked.

A few customers are of the belief that this check includes rectification of faults. It is stressed that this is not the case, the annual service is a check only of the habitation aspect of the motorhome.

If faults are found, the technician will advise you, the customer, of the fault and the recommended course of action to resolve this.

Servicing is not included in this check.

All facilities are run and tested through their operational envelope. For example, the flame propagation on the refrigerator and other main gas appliances (where visible) is checked. If the flame is burning a wrong colour or burning too far from the jet, we again advise you, the customer, as to how this should be rectified.

We also recommend and are only too happy to arrange for the refrigerator of your Auto-Sleeper to be checked here at the Service Centre by a qualified Dometic engineer. In this instance we call upon Leisure Appliances and Repairs of Hereford who come, by appointment, to carry out the necessary work.

The only component that is changed during the course of the annual check is the flexible gas hose, the hose that leads from the bulkhead fitting in the gas compartment to the gas regulator.

A further aspect of the test is a gas pressure test.

You will see also that we check that key components are serviceable (fire extinguishers etc) and furthermore that where appropriate, items are lubricated and checked for serviceability.



## MOTOR CARAVAN ANNUAL HABITATION SERVICE CHECK

### CHECK SHEET CUSTOMER COPY

<b>Vehicle Reg. Mark</b>
Make & Model
Year of Manufacture
Recorded Mileage

<b>A Class</b>
Coachbuilt
High top conversion
Elevating Roof
Dismountable

CHECK ITEM	Manual	OK	Remarks - Advice to Customers
<b>SECTION 1: BODY MOUNTING</b>			
BODY TO CHASSIS			
BODY TO CAB			
BODY RETENTION			
<b>SECTION 2: WINDOWS</b>			
WINDOWS			
<b>SECTION 3: DOORS</b>			
EXTERNAL			
INTERNAL			
<b>SECTION 4: CHASSIS</b>			
CORNER STEADIES			
FOLDING STEP			
WATER TANK MOUNTS			
SPARE WHEEL			
WHEEL BOXES			
<b>SECTION 5: BODY EXTERIOR</b>			
ROOF LIGHTS			
ROOF RACK AND LADDER			
MOULDINGS AND TRIM			
FLUE TERMINALS, AIR VENTS			
<b>SECTION 6: INTERNAL</b>			
SEEPAGE CHECK			
FURNITURE			
DINETTE SEATS/BEDS			
CURTAINS, BLINDS, NETS			
CAB SEATS			
FIRE EXTINGUISHER			
FIRE BLANKET			
WARNING NOTICE			
HEATING EQUIPMENT			



## SERVICE DETAILS



CHECK ITEM	Manual	OK	Remarks - Advice to Customers
<b>SECTION 7: LIFT UP ROOFS</b>			
LIFTING MECHANISM			
CANVAS SIDE WALLS			
SOLID SIDE WALLS			
LOCKING			
<b>SECTION 8: GAS SYSTEM</b>			
CYLINDERS & REGULATOR			
HOSE & PIPING			
APPLIANCES			
<b>SECTION 9: WATER SYSTEM</b>			
FRESH WATER TANK			
WASTE WATER TANK			
FILTER PUMP			
SYSTEM CHECK			
WASTE WATER SYSTEM			
COUPLINGS & FLUIDS			
<b>SECTION 10: ELECTRICS</b>			
12 VOLT SYSTEM			
BATTERIES			
WIRING			
FUSES, FUSE HOLDERS			
APPLIANCES			
MAINS 230 VOLT SYSTEM			
<b>SECTION 11: VENTILATION</b>			
HIGH LEVEL			
LOW LEVEL			

DEALER:	SIGNED:
	DATE:



<div>DEALER STAMP</div> <div>DATE:        /        /</div>	<div>DEALER STAMP</div> <div>DATE:        /        /</div>
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