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IMPORTANT NOTICE

Your vehicle is fitted with deadlocks on all doors. These are intended to improve vehicle security, and mean that even if forced entry is gained to the vehicle, for example through a broken window, it is still not possible to open the doors from inside.

However, this also means that in some circumstances exit from the vehicle may be delayed in an emergency.

Please read carefully the warning given on page 6-1.



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 Volkswagen 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 Trident, with a fixed high roof, and the Trooper Low Line with a canvas side elevating roof.

These models are based on the Volkswagen T5 window van.

The habitation area is similar in all models, the only variation being in the roof area.

Gas System

The gas system is designed to operate on LPG stored in a re-fillable tank fitted inside the vehicle. The regulator has a working pressure of 30 mbar.

Conversion Type

Panel van conversion with four seats designated for use whilst the vehicle is in motion.

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 - Volkswagen

For all automotive matters you should refer to the Volkswagen 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.

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



Auto-Sleeper Warranty

1. Motorhomes produced by Auto-Sleepers Ltd (hereafter referred to as the Company) are covered by a 2-year warranty.
2. During this period the Company undertakes to repair or, if deemed necessary by the Company, replace all defective parts of the motorhome subject to the conditions set out in this document.
3. This warranty commences on the day the vehicle is registered with the relevant authorities in the original country of sale OR 12 months from the date the vehicle was invoiced to the supplying dealer whichever is sooner.
4. The supplying Dealer must explain the warranty terms and conditions to the purchaser and return the completed Warranty Registration Card – see below - to the Company to activate the warranty cover.
5. Auto-Sleepers Dealers are not agents of the Company and cannot bind the Company to any agreement for warranty work to be undertaken unless they have obtained prior authority from the Company.
6. Defects in the base vehicle are covered by the base vehicle manufacturers warranty and any problems with it, or its accessories, must be referred to the base vehicle manufacturers' agent.
7. Warranty cover is provided subject to the completion of regular servicing/inspection by an authorised Auto-Sleepers Dealer or NCC Approved Workshop and this must meet the requirements of the NCC Motorhome Habitation Service Schedule. These services must take place on the anniversary - plus or minus 60 days – of beginning of the warranty period. The Owner should retain copies of the service schedules and receipted invoices as proof that they have been completed
8. All warranty issues must be reported, in the first instance, to the supplying dealer.
9. Year One Cover

The warranty covers faults in the motorhome conversion arising from manufacturing defects or defective parts with the exception of.

 - a. Those exhibiting the effects of fair wear and tear.
 - b. Damage and defects that have arisen as a result of accident, misuse, negligence or neglect.
 - c. Replacement bulbs, light emitting diodes, fluorescent tubes, fuses.
 - d. Leisure batteries, unless covered for the unexpired part of a 90 day warranty that begins when the motorhome is delivered by the Company to the Dealer.
10. Year Two Cover

The warranty covers is the same as year 1 with the following additional exclusions.

 - a. External and interior door hinges and catches
 - b. Interior and exterior transfers, coach lines, decals and adhesive décor parts
 - c. Interior and exterior surface finishes – including all painted surfaces and heat shields
 - d. Glass worktops and mirrors
 - e. Soft furnishings, curtains, carpets, and other floor coverings.
 - f. Window and roof light glazing units, blinds, fly screens, stays and catches.
 - g. Microwaves, cookers, grills and hobs, refrigerators, water heaters, space heaters, TVs and audio equipment
11. General

These are terms applying to the whole warranty period - the warranty does not cover,

 - a. The effects of normal wear and tear associated with use, normal deterioration, corrosion, or fading,
 - b. Accidental damage of any kind,
 - c. Damage caused by animals, rodents or others pests,
 - d. Replacement parts where these have reached the end of their effective working life,
 - e. Maintenance activities including; the adjustment of doors and catches, servicing of appliances or cleaning,
 - f. The supply of a replacement vehicle during any repair period.
 - g. Costs incurred returning the Motorhome to a repairer – these are the responsibility of the owner.
 - h. Accommodation costs incurred as a result of a failure of the vehicle, or any component in or on it, or as a result of returning it to a place of repair.
 - i. To make a claim under this warranty please contact your supplying Auto-Sleeper Dealer.
12. Exclusions and Scope
 - a. Motorhomes hired or loaned for reward, financial or in kind, are not covered by this warranty.
 - b. Modifications, however minor, will invalidate the warranty.
 - c. Cover is limited to motorhomes purchased and used in the UK – cover for motorhomes used outside the UK is limited to 90 days per continuous trip.
 - d. If the motorhome is sold before the end of the original warranty the benefit of the remaining period can be transferred – see the Warranty Transfer Form below- to the new owner using the warranty transfer form. There is a fee for this service of £100-00 + VAT.

Failure to request this transfer within 14 days will invalidate the remaining warranty.
 - e. This warranty does not affect your rights as protected by UK consumer legislation.



Warranty Registration Card

The supplying Dealer must explain the warranty terms and conditions to you, the purchaser, and return the completed Warranty Registration Card to the Company to activate the warranty cover.

Please sign below to say that you have had the warranty fully explained and that you understand it and the servicing requirements therein. Signing does not affect your statutory rights.

Registration Number		Chassis Number	
Model		Auto-Sleeper Job Number	
Purchaser			
Address			
Telephone		E-mail	
Supplying Dealer			
Customer Signature			
Dealer Signature			



Warranty Transfer Form

If the motorhome is sold before the end of the original warranty the benefit of the remaining period can be transferred to the new owner using this form. A £100-00 + VAT fee is charged for this service.

Failure to request this transfer within 14 days of purchase will invalidate the remaining warranty.

Registration Number		Chassis Number	
Model		Auto-Sleeper Job Number	
New Owner			
Address			
Telephone		E-mail	
I have read and understand the terms and conditions of the warranty, including the servicing requirements, as applicable to this vehicle.			
Signed		Date	



BODY CONSTRUCTION:

Volkswagen T5 window van, SWB.

Body paint colours:

- Candy White
- Fresco Green
- Reflex Silver
- Sand Beige

Floor Vinyl: Dark Wood.

Furniture: Amati Walnut.

Furniture fittings: Chrome.

Work Surfaces and Table finish: Slate.

Carpet: Oasis Madrid.

Trooper Low Line - Coral Twist.

Cushions/

Upholstery: Judy.

Exterior

Graphics: Trident - tba.

Trooper LL - tba.



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 and according to restricted site times.

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.

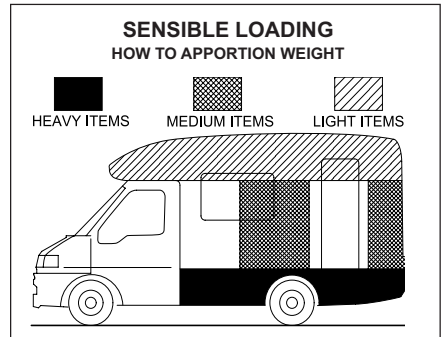
User Payload

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 from site supply before disconnecting from vehicle, store in safe place. Beware of potential shock from wet cable.
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. Check underneath the vehicle for stray items.
23. Safely store away any levelling blocks in an appropriate place.



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.

Spare Wheel

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

- Follow the procedure described in the Volkswagen handbook in order to fit the spare wheel.
- The spare wheel is located under the floor at the rear of the vehicle.
- Ensure that the wheel is of the same construction and size as the one to be replaced.
- The tools, jack handle and wheelbrace are stored behind the driver's seat.

- Use the standard jacking points as per the vehicle handbook.

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, push the release



lever, located at the front of the seat, sideways.

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

Note: It is important to site your motorhome level to ensure correct operation of the refrigeration, cooker etc, by using purpose made ramps and NOT bricks or such items.



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.

Emergency Exit

WARNING

Your vehicle is fitted with deadlocks, on all doors, as part of the VW security system. These are activated automatically when the key fob is used to lock the vehicle, and mean that the doors cannot be opened even if entry has been gained to the inside, through a broken window for instance.

However, this also means that in an emergency, exit from the vehicle may be delayed if the key fob has been used to lock the vehicle with people inside, and is not immediately to hand.

In order to avoid this possibility it is important that the vehicle is not locked using the key fob when people are inside, at night for instance.

Instead, use the central locking button on the driver's door control panel to lock the vehicle.

This will lock the vehicle from the outside, without applying the deadlocks, but means that the doors can still be opened immediately from inside by pulling the door release lever twice.

Please refer to the VW handbook section on 'Locking and unlocking the vehicle' for further details, and note carefully the warnings given there also.

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.**

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 it 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 WV2 or WV3, 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 bulkhead on the right hand side of the vehicle. (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 freshwater tank is located behind the rear axle, and the waste water tank is fitted in the centre of the vehicle. The train taps are clipped under the nearside sill.

For capacities of both see the Technical Specification Section.

The fresh water tank is filled through the Whale socket on the offside of the vehicle using the special hose supplied.

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 Whale submersible water pump is fitted in the freshwater tank of your vehicle. This is a compact, self venting, high flow pump which is quiet in operation and has a maximum flow rate of 15.8 litres per minute.

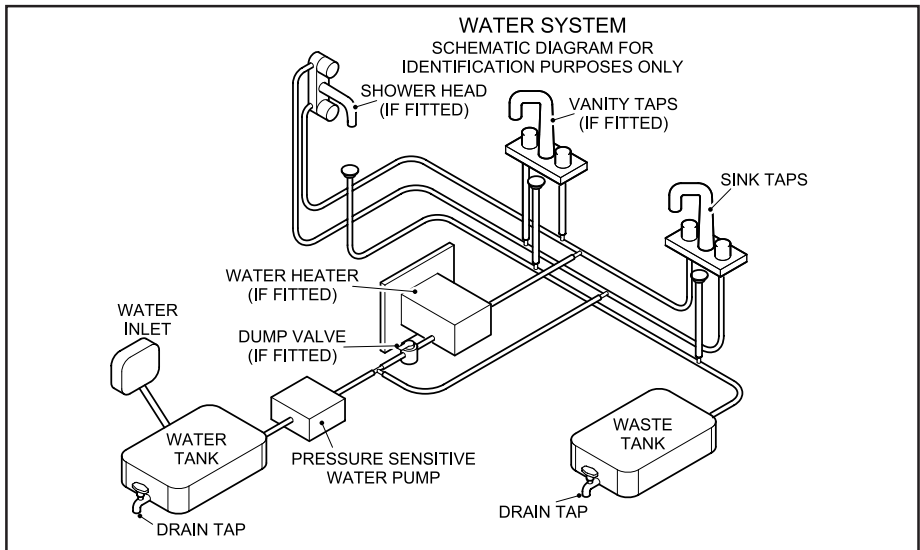
Maintenance

The pump is a sealed unit so no maintenance is required other than a check as part of the annual habitation service.

Ensuring the water supply is free of debris when filling the tank will reduce the likelihood of pump clog.

Winterising

To protect against damage as a result of freezing, drain the entire water system.





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 in a compartment below the wardrobe floor, and is accessible via a lift out panel. 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.

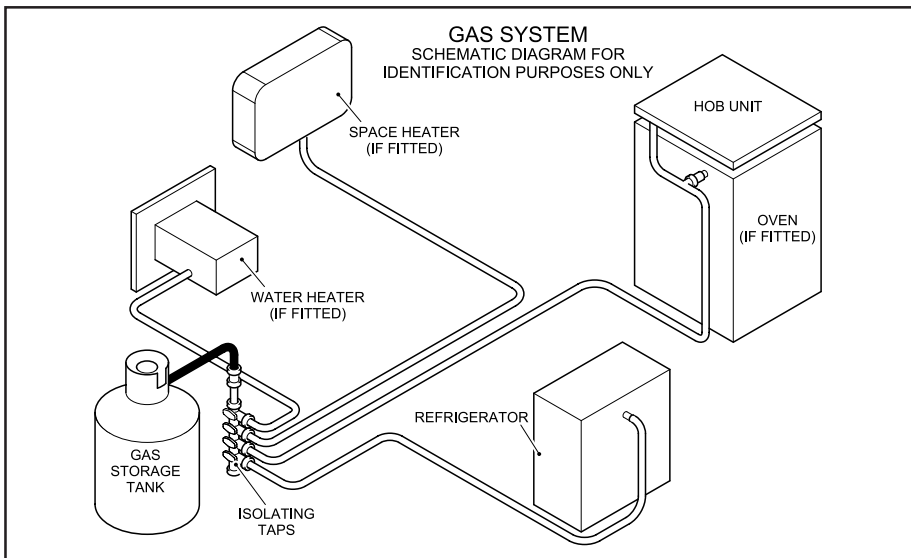
There are many companies producing LPG but all brands are suitable for use in your vehicle.

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 located on the offside rear side of the vehicle.

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.

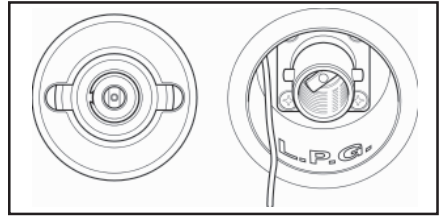
LPG tanks are fitted with a valve that stops the flow once the tank has reached its maximum safe filling level. Once the meter stops the customer simply disconnects the nozzle and returns it to the dispenser.



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

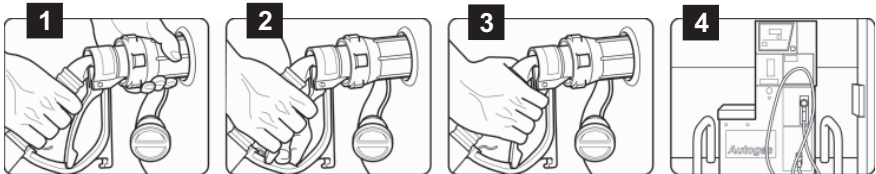


When connecting the nozzle to the filler valve on your vehicle always check that the locking pins are aligned.

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

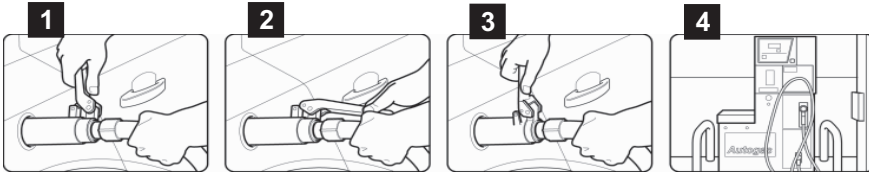
(3) Ensure hands are away from the nozzle barrel.

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.

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.

MAINTENANCE

The bulk tank installation requires no attention other than a check at the annual habitation service, however, it should be noted that the bulk tank itself must be pressure tested by an approved test house every 10 years.

(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.

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.

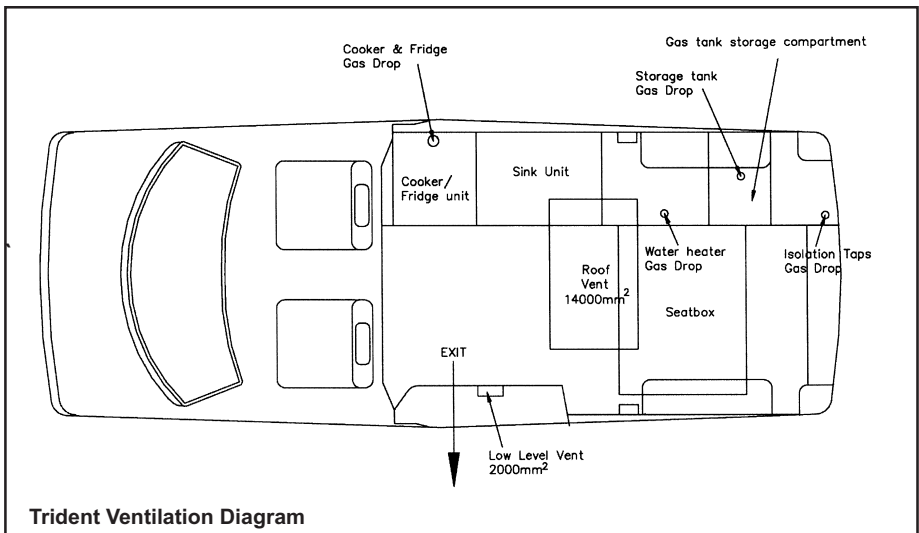
Maintenance

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

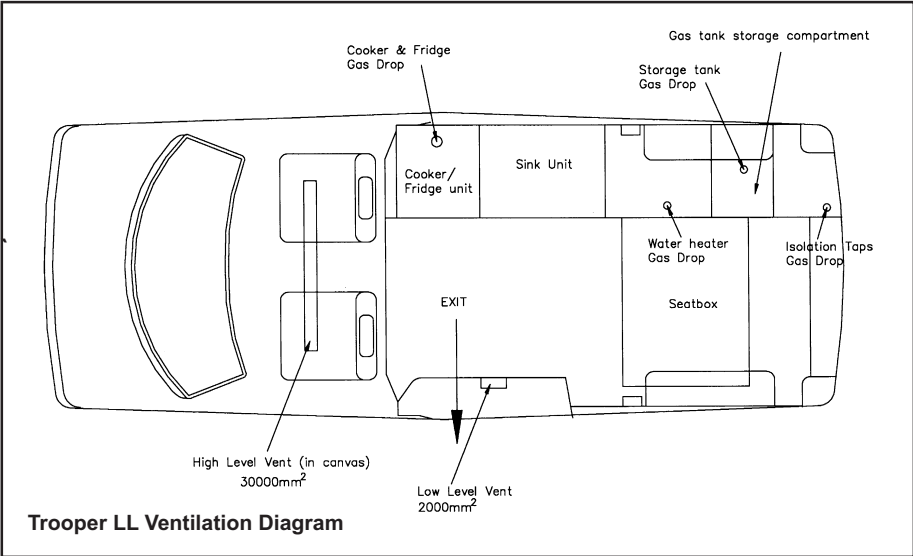
at least annually for damage or blockage. Screens and/or grilles should be kept clean and free from dust. See diagram of upper/lower ventilation.

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.



Trident Ventilation Diagram



Roof-mounted Flue installations

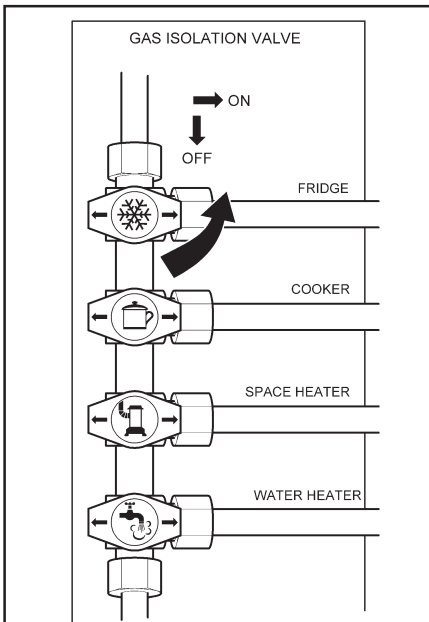
All flue installations should be inspected once a year throughout their length for corrosion. Flues should be replaced if any sign of perforation is found. Ensure that the replacement is of an approved type.

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

Connection

Ensure that the gas regulator is correctly connected to the gas cylinder in gas bottle compartment and that the hose is tight. 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).



Gas isolation valve

Note: Amount and order of taps may vary from that which is shown.

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 or changing gas cylinders.

- 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.
- Always turn off the gas cylinder valve(s) or inlet to the motorhome or other dwelling when gas appliances are not in use.
- 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
Space Heater	2.0kW
Water Heater	1.2kW
Grill	1.5kW
Hob burners (x2)	1.4kW (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: Electrical heaters have 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.

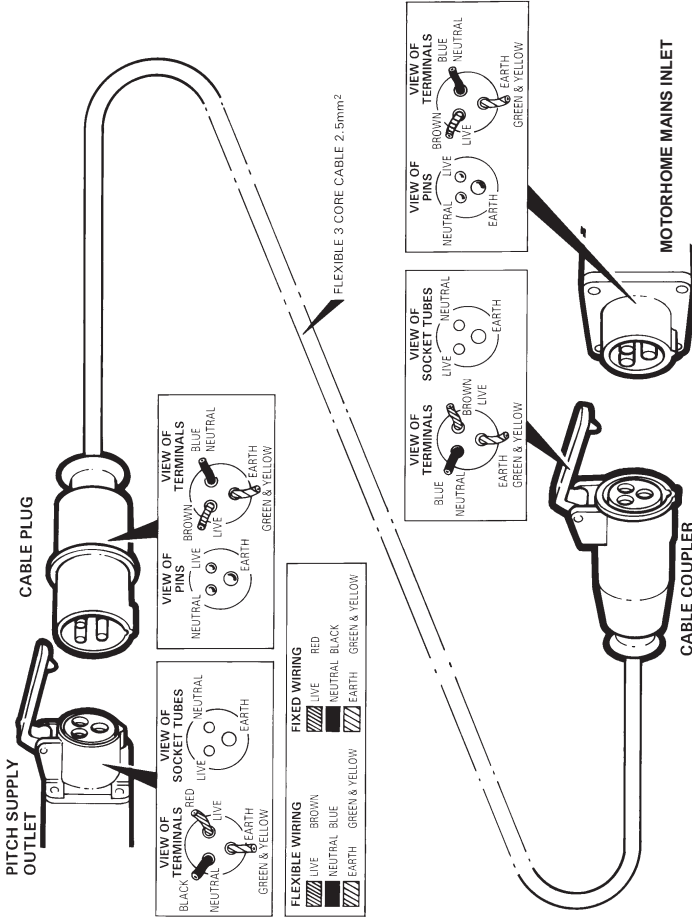
The only certain way of making equipment safe is to unplug it.

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 ± 2 metres. When in use it must be fully uncoiled and protected from traffic.



WIRING OF CONNECTING CABLE AND MOTORHOME MAINS INLET



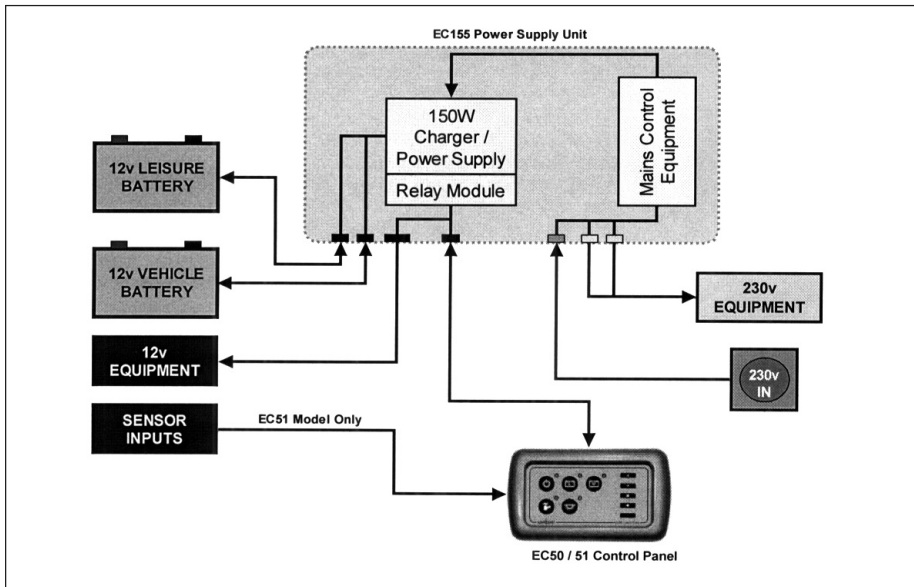
EC155 POWER CONTROL SYSTEM

1 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 reduces 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.

2 System Overview

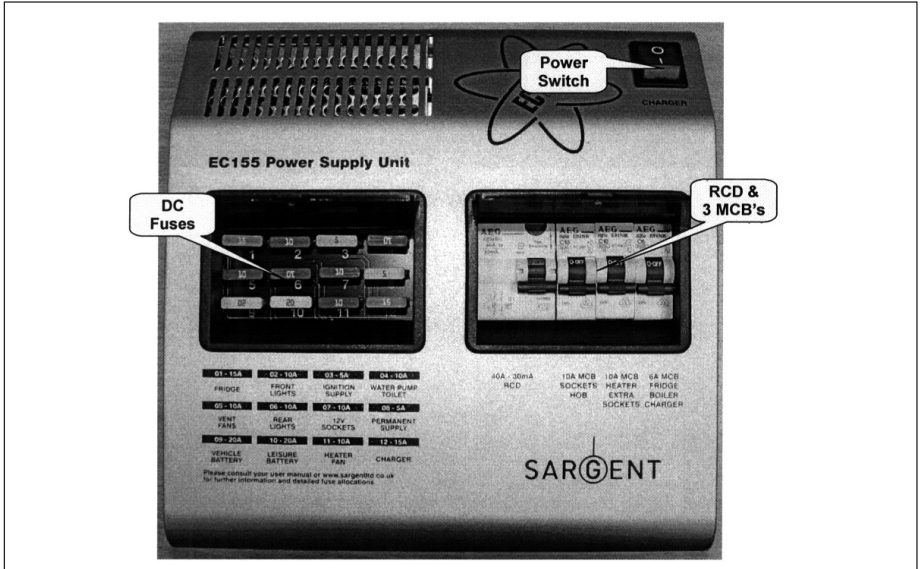
The following diagram shows the typical configuration of the EC155 system. The key component is the EC155 power supply unit (PSU), which is the hub of the system and provides connectivity to the ancillary components and the EC50 series control panel.



3 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.

The following diagram shows the EC155PSU layout.



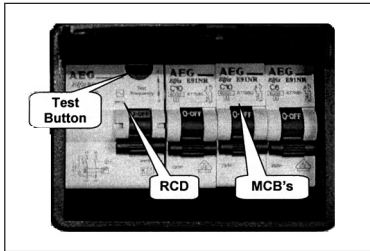
WARNING: Under heavy loads the EC155PSU case may become hot. ALWAYS ensure the ventilation slots have a clear flow of air. Do not place combustible materials against / adjacent to the EC155PSU. The PSU will shutdown if overheated and will restart automatically when cool.

3.1 Battery Charger/Power Converter

The EC155PSU 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 charger
3A	9A
6A	6A
9A	3A
12A	0A

3.2 Residual Current Device & 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 section 5.1)

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	Wire Colour	Description
1	10 Amps	White	230v Sockets
2	10 Amps	White (Yellow for heater)	Extra 230v Sockets / Heater
3	6 Amps	Black (Blue for water heater)	Fridge/Water Heater / 12v Charger (internally connected)

3. 3 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 EC155PSU.

Fuse	Rating	Fuse Colour	Wire Colour	Description
1	15 Amps	Blue	Red / Yellow	Fridge
2	10 Amps	Red	Grey	Front Lights
3	5 Amps	Tan	Yellow / Green	Ignition Supplies
4	10 Amps	Red	Green / Blue	Water Pump / Toilet
5	10 Amps	Red	Black / Blue	Ventilation Fans
6	10 Amps	Red	Pink	Rear Lights
7	10 Amps	Red	Yellow / White	12v Sockets/TV Amplifier/Entertainment
8	5 Amps	Tan	Brown / Yellow	Permanent Supply (Radio / Fridge)
9	20 Amps	Yellow	Brown / Green	Vehicle Battery
10	20 Amps	Yellow	Brown / Blue	Leisure Battery
11	10 Amps	Red	Black / Red	Heater Fan
12	15 Amps	Blue	-	Charger

The following table shows details of the fuse(s) located at the leisure battery.

Battery 1	20 Amps	Yellow	Brown / Blue	Fuse remotely located near battery
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3.4 Battery

A) 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 EC155PSU 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.

B) Installation & Removal

Always disconnect the 230v mains supply and turn the EC155PSU 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 not 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.

C) 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.

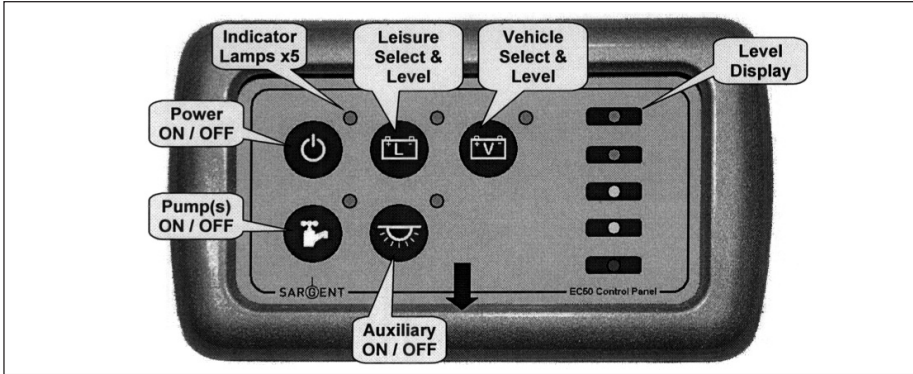
To prevent over discharge, the EC155PSU in conjunction with the EC50 series control panel incorporates a battery protect circuit that warns and then disconnects the batteries when they fall below the following conditions:

Battery	Voltage cut off	Action after cut off	Notes
Vehicle	10.9V	Battery selection is changed from Vehicle battery to leisure battery. If the leisure battery is below 9V then a further warning will occur (see below).	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	9V	Power is turned off	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.

4 Control Panel Details

4.1 Layout and Buttons

The following diagram shows the control panel layout and button functions (EC50 control panel).

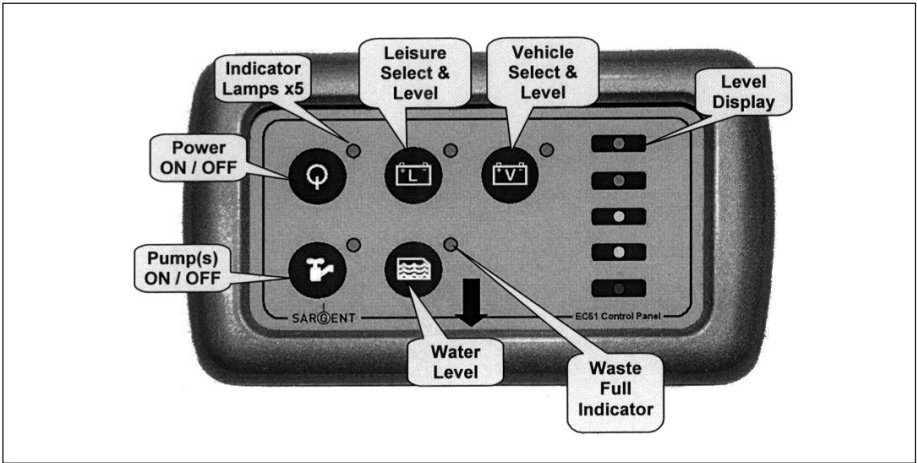


Note: to remove the decorative bezel, **pull down** and **lift forward** as indicated by the blue arrow.

4.2 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 over night 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.
	Select LEISURE battery and display battery voltage	This switch is used to select 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 5 seconds. The LED next to the button will show that the battery has been selected. 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.
	Select VEHICLE battery and display battery voltage	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 5 seconds. The LED next to the button will show that the battery has been selected. 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.

EC51 version of the control panel with water level display



Symbol	Function	Description
	Water Level test	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 five seconds.
	Waste Full indicator	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.



4.3 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.

4.4 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%

5 Operational & Safety Information

5.1 Connecting to the mains supply - safety checks

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

- a) *Ensure suitability of the mains supply.* Your leisure vehicle should only be connected to an approved supply that meets the requirements 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. Please note that some electronic generators may not be compatible with your leisure system.
- b) *Switch the EC155PSU internal power converter OFF.* Locate the red 'Charger' power switch on the EC155PSU and ensure the switch is in the OFF (0) position before connection to the mains supply.
- c) *Connect the hook-up lead.* Firstly connect the supplied hook-up lead (orange cable with blue connectors) to the leisure vehicle and then connect to the mains supply.
- d) *Check residual current device operation.* Locate the RCD within the EC155PSU and ensure the RCD is switched on (lever in up position). Press the 'TEST' button and confirm that the RCD turns 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 section 5.2.
- e) *Check miniature circuit breakers.* Locate the MCB's within the EC155PSU (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 section 5.2.
- f) *Turn the EC155PSU ON.* Locate the red power switch on the EC155PSU and turn to the ON (I) position. The switch will illuminate when turned on.
- g) *Check operation of equipment.* It is now safe to check the operation of the 12V and 230V equipment.



5.2 Common Fault Table

Fault	Possible Cause	Proposed Fix
No 230 volt output from PSU.	Connecting lead between the site and Leisure Vehicle not connected.	Check and connect lead as per 5.1C. Check also input connector at the base of the EC155PSU.
	RCD switched off.	Reset RCD as per 5.1D.
	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.
Control Panel Problems	Control Panel has no display.	Check batteries & fuses, turn EC155PSU charger switch on, and ensure mains supply is connected. Check control panel connecting lead at EC155PSU 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 3.4C. Engine has been started, all equipment has been disconnected to meet EMC requirements. See 4.3.
	Control Panel display corrupt/erratic function.	Observe control panel handling instructions. Control panel software may have crashed. Reboot control panel by turning off the EC155PSU charger switch and removing fuses 9 & 10 at the EC155PSU (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 of the bottom, unplug the control panel multi-way connector, wait 30 seconds, then plug back in and reassemble.
No 12 Volt Output from PSU	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 3.4.
	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 charging 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 section 3.
	Other fault.	Contact your dealer.
Pump not working	Fuse blown.	Replace fuse.
	Pump turned off.	Turn pump on by pressing the pump button at the EC155 control panel (tap symbol).



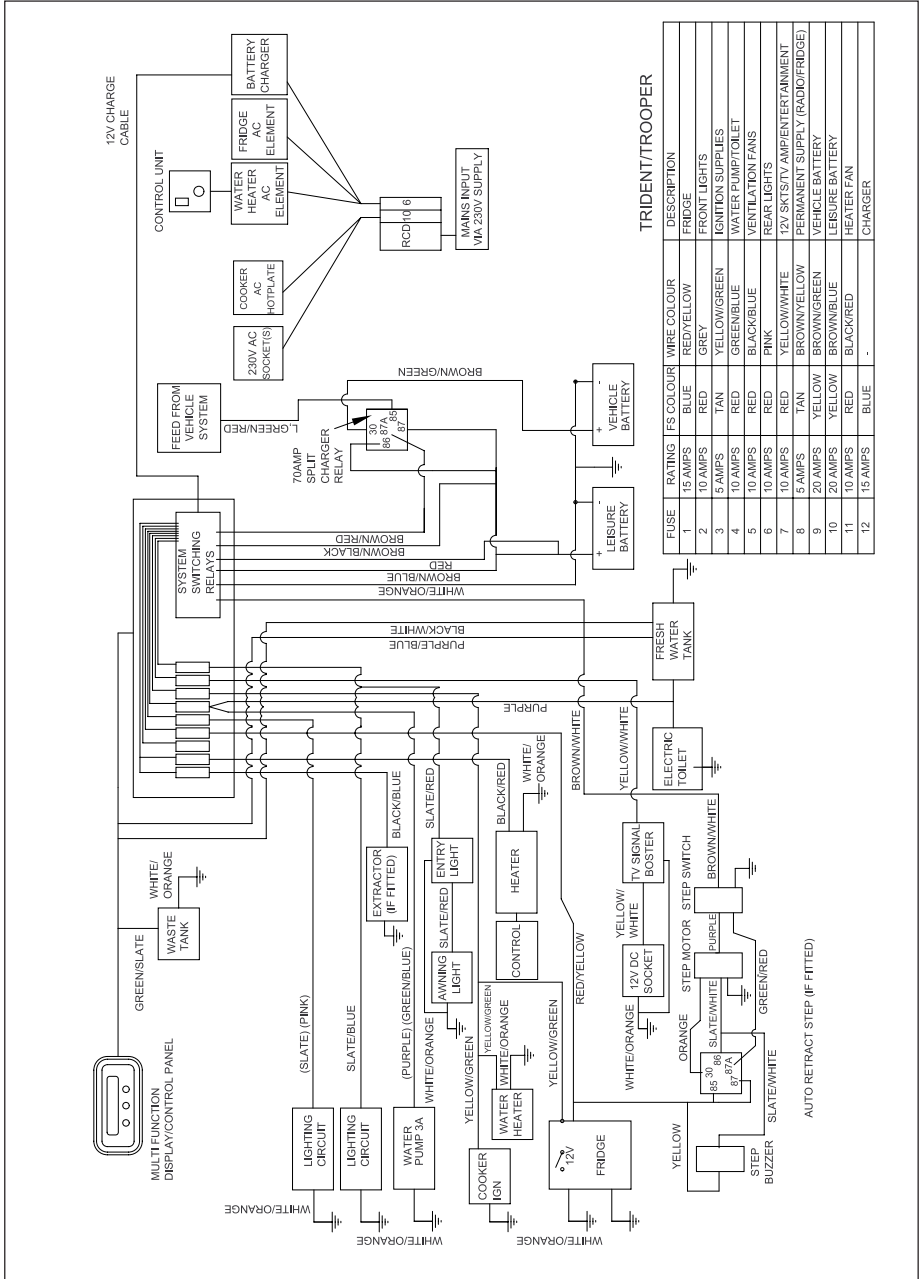
6 Technical Data & Approvals

6.1 Outline Specification

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	
INPUT 12V	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 220-240 Volts AC +/- 10%, Frequency 50 Hz +/- 6%, Current 3A max. DC Output 13.8 Volts nominal, Current 12 Amps max (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 water 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° Centigrade. PSU case temperature with full load 65°C Max.	Automatic shutdown and restart if overheated/



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 *

2.0L TDi Engine	TRIDENT	TROOPER LL
Vehicle Designation	T5	T5
MTPLM	3000	3000
Mass in Running Order	2427	2375
Mass of the User Payload	573	625
Conventional Load @ 75kg per person)	225	225
Designated Passenger Seats (excluding driver)	3	3
Essential Habitation Equipment	70	70
Personal Effects (standard minimum figure)	89	89
Remainder for Personal Effects / Options / Accessories	189	241
Optional Cycle Rack	10	10
Optional Awning	22	22
Gross Train Mass	5200	5200
MBTM	2500	2500

Axle Weights

Front, in Running Order	1333	1338
Rear, in Running Order	1094	1037
MTPLM Front	1550	1550
MTPLM Rear	1600	1600

* Data for 140 PS automatic model



WEIGHT AND DIMENSION DATA (continued)

DIMENSIONAL DATA

All dimensions in mm

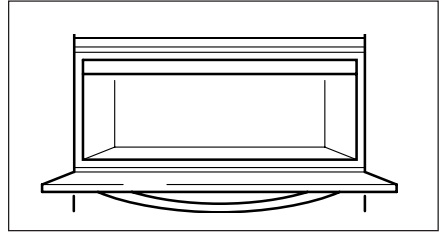
MODEL	TRIDENT	TROOPER LL
Base Vehicle Manufacturer	VW	VW
Base Vehicle Model	T5	T5
Wheelbase	3000	3000
Overall Length	4890	4890
Overall Width (mirrors extended)	2245	2245
Overall Width (mirrors folded)	2045	2045
Overall Height	2690	2015
Internal Height (maximum)	1905	2150
Internal Height (minimum)	1820	1775
Double Bed	1910 x 1120	1910 x 1120
Single Bed, nearside	N/A	N/A
Single Bed, offside	N/A	N/A
Fresh Water Tank Capacity (litres)	57	57
Waste Water Tank Capacity (litres)	29	29
Gas tank capacity, LPG	12L	12L

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.

SMEV HOB & MINI GRILL



BURNER OPERATION

The burners on this appliance have fixed aeration and no adjustment is required. The burners should flame as follows:

Propane - The flames should burn quietly with a blue/green colour with no sign of yellow tips.

Butane - Normally on initial lighting, a small amount of yellow tipping will occur and then slightly increases as the burner heats up.

HOB

Cautions:

- When using small pans the flames should not spread beyond the base of the pan as this will reduce the efficiency of the burner.
- Avoid old or mis-shapen pans as these may cause instability.
- The lid must be opened fully prior to using the hotplate burners.

Using the hob gas burners

1. Ensure gas cylinder/supply is connected and turned on. In the event of a gas smell turn off at gas cylinder/mains and contact supplier.
2. Flame supervision: Each burner is controlled individually and is monitored by a thermocouple probe.
3. To light: Push the control knob in slightly, turn to ignition position (large flame symbol). Ignite the burner by pressing the ignition button, keeping the control knob pressed in for 3-5 seconds. Release the knob and turn to the required heat setting (large or small flame symbol).



4. To turn off: Turn the control knob until the dot 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: If the burner does not ignite immediately, turn the knob to 'minimum rate' (small flame) position and repeat operation. If ignition is still not possible have the appliance checked to ensure that there is gas supply. If the unit still fails to ignite turn the gas off at the main supply and contact your dealer.

GRILL

Cautions:

- The grill must only be used with the door open.
- The heat shield below the fascia should always be pulled out prior to lighting the grill.
- The grill pan handle allows removal or insertion whilst the pan is in use.
- Always remove the handle when the pan is in use.

Using the grill burner

1. Ensure gas supply is connected and turned on. In the event of a gas smell turn off gas at the isolation tap or cylinder and contact dealer.
2. To light: Push the control knob in slightly, turn to ignition position (large flame symbol). Ignite the burner by pressing the ignition button, keeping the control knob pressed in for 3-5 seconds. Release the knob and turn to the required heat setting (large or small flame symbol).
3. A reversible grill pan trivet enables the correct grilling height to be achieved.
4. To turn off: Turn the control knob clockwise until the dot on the 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.

WARNINGS

- **The grill MUST only be used with the door open.**
- **The heat deflector below the fascia should be pulled out prior to lighting the grill. Never adjust the heat deflector position without using hand protection, i.e. oven gloves.**

Do's and Don'ts

- Do** read the user instructions carefully before using the appliance for the first time.
- Do** clean the appliance regularly.
- Do** remove spills as soon as they occur.
- 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.



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.

EXTERNAL TV SOCKET

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



WATER HEATER

Your vehicle is fitted with a Whale Water Heater which will operate on LPG or 230V mains electricity. The unique design has a 13L capacity hot water tank, sufficient for two 5 minute showers with minimal reheat, and incorporates versatile controls for low current draw or fast heat up settings. With robust insulation and no removable flue cover the Whale Water Heater needs minimal maintenance.

WARNINGS

In the unlikely event of leaks in the gas system, or if there is a smell of gas:

- Extinguish all naked flames
- Do not operate any electrical switches
- Switch off all appliances
- Open windows and doors for ventilation
- Do not smoke
- Shut off gas connection

Get the system thoroughly checked by a registered gas engineer at a Whale Approved Service Centre

The appliance must not be operated while the vehicle is being re-fuelled.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

Ensure the water system including water heater is full of water, and the vehicle is level before operating.

This appliance must be drained if there is a risk of frost. Frost damage will not be covered by warranty.

The water temperature cannot be

adjusted. It is automatically set to approximately 70°C to prevent bacteria growth. To avoid scalding, the temperature of the hot water supplied to the taps and showers should be controlled. Do not use the water as drinking water.

Any alteration to the appliance, including flue plate, use of non-Whale spare parts/accessories and non-observation of the installation and operation instructions shall lead to cancellation of the warranty and exclusion of liability claims and results in it becoming illegal to use the appliance.

INSTRUCTIONS FOR USE

Please read the following instructions carefully.

Observe all warnings.

Never operate the water heater without water in it.

This appliance must not be connected directly to the mains water supply without a pressure regulator fitted, or any water supply greater than 190 kPa (1.9 bar).

Ensure the vehicle water system including water heater is full of water, and the vehicle is level before operating.

Operating Instructions

For operation of the heater, a 12 V dc supply must be connected at all times. To operate the heater's electric elements, it must also be connected to a suitable 230V ac supply.

Upon initial operation, or to refill after the system has been drained, check the drain valve is closed then fill the system with clean fresh water. To fill, open one hot tap and switch on the water pump. Leave the tap open to allow air to escape while the water heater is filling. Once water flows smoothly out of the hot tap, the water heater is filled. To allow the remainder of air to escape from the system open each hot water tap in turn until water flows smoothly.

Please note: In cold temperatures the water in the supply pipe work may freeze and

prevent filling.

Check that all the gas and/or electricity supplies are turned on.



Gas operation. Operate the left-hand switch to the on (flame) position. There will be a pre-purge pause of approx. 5 seconds to allow any un-burnt gas to leave the flue. A green LED will light upon successful flame ignition. If there is air in the gas supply line it may take a few attempts for the gas to ignite. See later section for gas lockout re-setting. If the ignition is not satisfactory the red LED will flash, refer to the trouble shooting guide.

Electric operation. The water heater is equipped with twin 600W / 230 V ac immersion heater elements offering operation at 600W or 1200W. Operate the right-hand rocker switch to the top position (⤴) to turn on one electric element. To turn on both electric elements, operate the right-hand rocker switch to the bottom position (⤵).

Note: The electric elements will still operate if the appliance is in gas ignition lock-out.

Gas and electric operation. For faster heating the appliance can be operated with both gas and electric.

Switching off. Operate the left-hand gas switch to the top Off position (○) and the right-hand electric rocker switch to the centre position (○). If the heater is not going to be used for some time, isolate the gas supply and drain water if there is a risk of freezing.

Please Note: The water may drip from the discharge pipe of the pressure-relief valve during heating up. This pipe must be left open to the atmosphere, must be installed in a continuously downward direction and in a frost free environment. The pressure relief valve must be operated regularly by turning the red knob in the anti clock wise direction, to remove lime deposits and to verify that it is not blocked.



TROUBLESHOOTING

The heater is equipped with an electronic diagnostic system which will detect fault conditions ranging from poor gas or dc supply to internal heater malfunctions. In the event of a failure, the red light on the control panel will flash a number of times, pause, and repeat until switched off. Count the number of flashes and refer to the table below.

Number of flashes	Fault	Remedy
1	No flame detected	Check gas supply making sure there is gas in the bottle and no blockage in the gas line. Ensure propane is used at temperatures below +5°C. Clear lockout as described below.
2	Overheat	Check there is water in the appliance. We recommend you wait at least 5 to 10 minutes to allow the heater to cool before clearing lockout as described below.
3	Low/high supply voltage	Minimum operating voltage is 10v, maximum is 15v, when measured at the heater. Check battery voltage. If between 10v and 15v, check connections between heater and battery. Check alternator or external battery charging. Clear lockout as described below.
5	Other/ internal fault	Attempt to clear lockout as shown below. If this fails, contact a Whale Authorised Service Engineer.

Gas Lockouts

Gas lockouts must be cleared by moving the gas switch from on position to off position then back to the on position. The complete sequence of switch movements must be completed within 2.5 seconds for a lockout to be successfully cleared. If there is air in the gas line, eg after a gas bottle change, the water heater may require several attempts before it lights.

Other Lockouts

If the lockout is caused when the unit is operated on electric, the lockout can be cleared by moving the electric switch from on position to off position then back to the on position. The complete sequence of switch movements must be completed within 2.5 seconds for a lockout to be successfully cleared.

Note: A cycling of the power supply to the unit will not clear a lockout. Some gas lockouts, eg ignition lockout will still permit

use of the appliance in electric only operation.

If the problem persists contact Whale Support on 0845 217 2933

Winterising / Draining

When using the heater in winter ensure the flue is not blocked by snow or fallen leaves etc. When not in use, ensure the heater is drained. This is particularly important during the winter months as a precaution against freezing. To drain, switch off the water pump at either the pump switch or main switch. Open all the hot water taps in the vehicle and operate the drain valve fitted in the system. The drain valve should be left in the open position to ensure all the water drains out.

Service Support

For serviceable parts advice please contact Whale Customer Support:

Tel: 0845 217 2933

Email: info@whalepumps.com



Warranty

The Whale Water Heater is covered by a 3 year warranty.

Please complete the enclosed warranty card and return to Whale.

For warranty details, please refer to the Whale Website www.whalepumps.com

Note that any alteration to the appliance, including flue components, use of non-Whale spare parts/accessories and non-observation of the installation and operation instructions shall lead to cancellation of the warranty and exclusion of liability claims and results in it becoming illegal to use the appliance.

Specification

Nominal water capacity: 13 L

Nominal heat input, Gas: 1.25 kW.

Nominal heat input, Electric: 1.2 kW.

Electric: 230 V ac: 50 Hz, 600/1200 W

Maximum current ac: 6 Amps

Maximum current dc: 0.36 Amps (0.01Amps on standby)

Maximum water temperature: Approx. 75°C

Typical heating up times from 15°C to 70°C:

Gas only: approx 43 minutes

Two electric elements only: approx 38 minutes

Gas and both electric elements: approx 22 minutes



SPACE HEATER

Your vehicle is fitted with a Whale Space Heater which operates on LPG. The nominal heat output is 2kW. The design is compact and needs minimal maintenance. The vehicle internal temperature is set by a room controller which can be manually adjusted to a wide range of temperature settings, or to warm weather ventilation.

WARNINGS

Do not operate the appliance while the vehicle is in motion.

In the unlikely event of leaks in the gas system, or if there is a smell of gas:

- Extinguish all naked flames
- Do not operate any electrical switches
- Switch off all appliances
- Open windows and doors for ventilation
- Do not smoke
- Shut off gas connection

Get the system thoroughly checked by a registered gas engineer at a Whale Approved Service Centre

The space heater shall not be operated in the following situations:

- When refuelling the vehicle
- When the vehicle in which the heater is installed is in motion.
- When the vehicle in which the heater is installed is in a confined space, such as a garage

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

Ensure that a minimum of one of the hot air outlet vents is permanently open. This should be the vent furthest away from the heater.

When operating using gas, the combustion air flue and outlet opening for the products of combustion (exhaust flue) shall never be obstructed. They should be checked regularly, and if necessary cleaned by the user (eg in winter, snow shall be removed from the combustion outlet and air intake).

Where the open end of the exhaust flue terminates, three sides of the under-floor space are to be kept open and not obstructed, and not contain through floor ventilation openings.

The heater, its gas supply, and flues for the products of combustion are to be inspected in accordance with national regulations or if these do not exist, the manufacturer's recommendations, however, it is advised that this should be done at least annually.

The Whale Space Heater should be checked periodically by a Whale Approved Service Centre / Technician, or competent person, at least annually. This should be completed according to the practice in the country where it is used and according to the Whale instructions. We recommend annual testing of gas soundness and combustion by an accredited LPG gas engineer. The appliance contains ESD sensitive components and therefore should only be opened by a Whale Approved Service Centre / Technician.

Please note: The heater and ducts will become hot. Please avoid anything directly touching the heater or ducts.

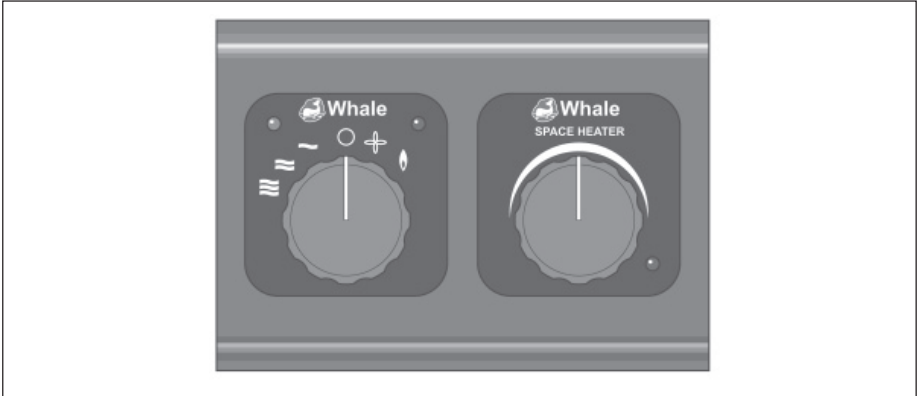


INSTRUCTIONS FOR USE

Please read the following instructions carefully.

Observe all warnings.

Operating Instructions



For operation of the heater, a 12 V dc supply must be connected at all times.

Fan only operation. Turn the selector knob to the fan on (⊕) position.

Gas operation. Turn the selector knob to the gas on (flame) position. There will be a pre-purge pause of approx. 30 sec's to allow any un-burnt gas to leave the flue. A green LED will light upon successful flame ignition. If there is air in the gas supply line it may take a few attempts for the gas to ignite. See troubleshooting section for gas lockout re-setting. If the ignition is not satisfactory the red LED will flash, refer to the trouble shooting guide.

Switching off. Turn the selector knob to the Off position (○). Note that the fan will continue to run for 3 minutes to allow the heater to cool down.

Adjusting the temperature. Turn the temperature control knob clockwise to increase and anti-clockwise to reduce the room temperature. The heater will automatically turn itself on and off to maintain the desired ambient temperature.

Note that the controls incorporate a low frost

protection setting. This can be activated by turning the temperature control knob fully anti-clockwise.

Maintenance

If the heater has not been used for some time dust may have settled inside the heater and the ducting. Run the heater on the "Fan only" setting until it clears. The outside of the appliance should not normally require cleaning. If it does, isolate the electrical supplies and wipe down with a soft, damp cloth only. Allow to fully dry before reconnecting the electrical supplies.

The Whale Space Heater should be checked periodically by a Whale Approved Service Centre / Technician, or competent person, at least annually. This should be completed according to the practice in the country where it is used and according to the Whale instructions. We recommend annual testing of gas soundness and combustion by an accredited LPG gas engineer. The appliance contains ESD sensitive components and therefore should only be opened a Whale Approved Service Centre / Technician.



TROUBLESHOOTING

The heater is equipped with an electronic diagnostic system which will detect fault conditions ranging from poor gas or dc supply to internal heater malfunctions. In the event of a failure, the red light on the control panel will flash a number of times, pause, and repeat until switched off. Count the number of flashes and refer to the table below.

Number of flashes	Fault	Remedy
1	No flame detected	Check gas supply making sure there is gas in the bottle and no blockage in the gas line. Ensure propane is used at temperatures below +5°C. Clear lockout as described below.
2	Overheat	Check the air ducts and vents are not blocked or restricted. We recommend you wait at least 5 to 10 minutes to allow th heater to cool before clearing lockout as described below.
3	Low/high supply voltage	Minimum operating voltage is 10v, maximum is 15v, when measured at the heater. Check battery voltage. If between 10v and 15v, check connections between heater and battery. Check alternator or external battery charging. Clear lockout as described below.
4	Combustion Air Fault	Check combustion air flue and exhaust flue for blockages.
5	Other/internal fault	Attempt to clear lockout as shown below. If this fails, contact a Whale Authorised Service Centre/Technician.

Lockouts must be cleared by turning the selector knob from gas on (flame) position to off position then back to the on position. The complete sequence of switch movements must be completed within 2.5 seconds for a lockout to be successfully cleared. If there is air in the gas line, eg after a gas bottle change, the space heater may require several attempts before it lights.

Note: A cycling of the power supply to the unit will not clear a lockout.

If the problem persists contact Whale Support on +44 (0)845 217 2933

Winterising

When using the heater in winter ensure the flues are not blocked by snow or fallen leaves etc. When the Space Heater is not going to be used for a long period of time, we recommend that the open end of the combustion air and exhaust flue are covered to prevent ingress of leaves etc.

Service Support

For serviceable parts advice please contact Whale Customer Support:

Tel: +44 (0)845 217 2933

Email: info@whalepumps.com



Warranty

The Whale Space Heater is covered by a 3 year warranty.

Please complete the enclosed warranty card and return to Whale.

For warranty details, please refer to the Whale Website www.whalepumps.com

Note that any alteration to the appliance, including flue components, use of non-Whale spare parts/accessories and non-observation of the installation and operation instructions shall lead to cancellation of the warranty and exclusion of liability claims and results in it becoming illegal to use the appliance.

Specification

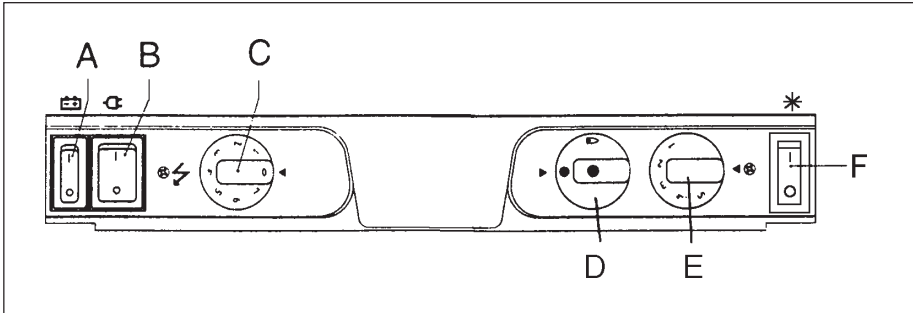
Nominal heat input, Gas: 2.0 kW.

Gas Consumption: 150g/h

Maximum current dc: 1.7 Amps (0.01Amps on standby)



REFRIGERATOR



OPERATING INSTRUCTIONS

The refrigerator can be run on either 230 volt, 12 volt or LP gas. Changing between these modes of operation is carried out by means of the controls on the control panel shown above.

Two rocker switches are used to select the electric power supply, one for 230 volt (B) and one for 12 volt (A).

Refrigerator temperature is controlled by a thermostat (C) when the unit runs on 230 volt.

The gas supply is turned on/off by means of the knob (D). When lighting the gas, one must depress the knob, as explained further on.

Refrigerator temperature is controlled by a thermostat (E) when the refrigerator runs on LP gas. Note that the thermostat has no 'off' position.

The gas flame is electronically lit, monitored and relit, if necessary. For this the toggle switch (F) should be 'on' during gas operation.

An indicator lamp in the switch flashes when the automatic igniter attempts to light the burner. Otherwise the lamp is off.

Starting the refrigerator

The position numbers refer to the figure shown above.

Caution: Only use one source of energy at a time.

LP gas operation

To start gas operation:

1. Open the shut-off valve of the gas bottle (check that there is enough gas). Open any onboard shut-off valve.
2. Check that the switches for mains and 12-volt operation are off.
3. Turn on the gas supply by pressing the (D) knob and turning it to the large flame symbol.
4. Set the thermostat knob (E) to the highest setting.
5. Throw on switch (F). A light in the switch should now start to flash, indicating that sparks are being generated at the burner.
6. Press the (D) button. This opens the flame failure device and allows gas to flow to the burner.
7. When the flame lights, the sparking stops automatically and the switch stops flashing.
8. Keep the (D) button pressed for a further 10 to 15 seconds to activate the flame failure device, then release it.
9. To terminate gas operation turn knob (D) to "*" and set switch (F) to "O".

230 Volt Operation

1. Turn the knob (C) to its highest (coldest) position.
2. Set switch (B) to position I.



12 Volt Operation

Your refrigerator only operates on 12 volts when the engine of the vehicle is running.

1. If applicable, turn off the gas operation.
2. Set the 12 volt rocker switch (A) to I.

Winter operation

Please check that the ventilation grills or the flue outlet are not blocked by snow, leaves, etc.

Ventilation grilles can be fitted with winter covers to protect the cooling unit against cold air. The covers may be fitted when the outside temperature is below approximately 10°C and should be fitted when the temperature is below freezing point.

Note: The covers should also be fitted when the vehicle is to be driven as required by European Type Approval for vehicle external projections.

We suggest that you also fit the winter covers when the vehicle is laid up during the winter months.

Regulating the temperature

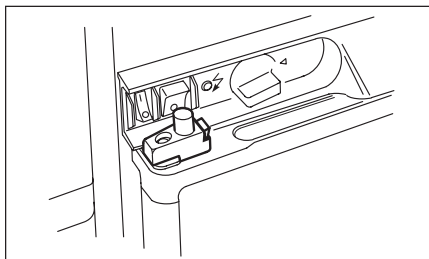
It will take a few hours to reach normal operating temperature. We suggest you start it well in advance of a trip and if possible store it with pre-cooled foodstuffs.

On 230 volt operation the refrigerator is controlled by a thermostat and the thermostat knob (C) should be set at 3-5. If a lower (colder) temperature is desired, set the thermostat to a higher figure.

On 12 volt operation the refrigerator works continuously.

On LP gas operation the refrigerator is regulated by the gas thermostat (E) which should be set at 3-5. If a lower (colder) temperature is desired, set the thermostat to a higher figure.

Travel Catch



Make sure that the travel catch is engaged when the vehicle is on the move (see diagram above).

The travel catch at the top of the door can be set in two different positions. In one position the door is held tightly shut. In the other position the door is secured ajar so that the refrigerator can be aired when not in use.

Food storage

Always keep food in closed containers. Never put hot food in the refrigerator, allow it to cool first.

Never keep items in the refrigerator which might give off flammable gases.

The 2-star (**) frozen food compartment is intended for the storage of frozen food and for making ice. It is not suitable for freezing items of food.

Never put bottles or cans of fizzy drinks in the frozen food storage compartment as they may burst when freezing. Also do not give children iced lollies straight from the frozen food compartment as they could cause frost burns.

Most kinds of frozen food can be stored in the frozen food compartment for about a month. This period of time may vary, however, and it is important to follow the instructions in the individual packets.

Making Ice Cubes

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



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.

- Switch off the refrigerator, as described in 'Switching Off'
- Remove the ice cube tray and food
- Leave the refrigerator door open
- After defrosting (freezer compartment and fins free of frost), wipe the cabinet dry with a cloth
- Use a cloth to mop up the water from the freezer compartment
- 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 a container at the back of the unit, from where it evaporates.

Cleaning

Clean the inside of the refrigerator regularly to keep it fresh and hygienic.

Soak a cloth in a solution of a teaspoon of bicarbonate of soda to half a litre of warm water. Wring out the cloth and use it to clean the interior of the refrigerator and its fittings.

Never use detergents, scouring powder, strongly scented products or wax polish to clean the interior of the refrigerator as they may damage the surfaces and leave a strong odour.

The exterior of the refrigerator should be wiped clean now and again, using a damp cloth and a small quantity of detergent, but not the door gasket, which should only be cleaned with soap and water and then thoroughly dried.

Turning off

If the refrigerator is not to be used for some time:

- Set any switches to 0.
- Set the gas valve (D) to ●.
- Shut off any on-board valve in the gas line to the refrigerator.
- Empty the refrigerator, defrost and clean it as described earlier. Leave the main door and the frozen food compartment ajar. Use the travel catch to hold in this position.
- When the vehicle is laid up for a long period of time fit the winter covers onto the vent grilles.

Maintenance

- Work on gas components and electrical installation may only be carried out by authorized personnel. We recommend you contact your Motorhome Service Centre or a 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.



Some Useful Hints:

Make sure that:

- Defrosting is carried out periodically.
- The refrigerator is left with the door ajar when it is not to be used for some time.
- Liquids or items with a strong odour are well packaged.
- The ventilation openings are unobstructed.
- The door is secured by means of the travel catch when the vehicle is on the move.
- Only one mode of operation at a time is used to run the refrigerator.

Technical Data

Capacity

Gross.....	60 litres
Net.....	51 litres
Frozen food compartment.....	6 litres

Electrical data

Input 230 V	105 watt
Input 12 V	100 watt
Energy consumption/24 hr	2.3 kWh

LP gas data

Input.....	186 watt
Input, low flame	86 watt
Energy consumption/24 hr	0.24 kg



INTERNAL LAYOUT

General

The Trident / Trooper range is designed as a two berth model, with two forward facing travelling seats in the rear.

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.

The driver and passenger seats are fitted with a swivel mechanism which is operated by a lever at the front of the seat.

Ensure that the seats are locked in the forward facing position before travelling.

Accommodation Seating

The Trident / Trooper range features a forward facing rear seat fitted with two lap and diagonal seatbelts.

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

Two pedestal tables are supplied with these vehicles. The small table top is stored behind the driver's seat and the large one in the front overhead cupboard of the Trident, or behind the rear seat on the Trooper. The table legs are securely stored by clips, in the upper rear cupboard of the Trident or in the underbed drawer of the Trooper.

When a table is required, the leg should first be placed in the floor mounting hole and the table placed on it. When the table is not in use the bung should be placed in the floor mounting hole.

Caution: The table tops and legs must be stored when the vehicle is in motion.

Kitchen Area

The kitchen area is on the offside of the vehicle and is equipped with a twin burner

hob with grill, a stainless steel sink with separate drainer, and a refrigerator. The hob, sink and drainer, when not in use are concealed beneath hinged glass lids which act as chopping boards and extra work surface. The sink is fed by a tap which folds down when not required.

The Dometic tilt-tolerant refrigerator is located beneath the grill at the front end of the kitchen unit. A red warning light will illuminate when it is operating on the 12V supply.

There are two cupboards, with sliding doors and shelves, fitted below the sink, with the lower one housing the electrical system control box on the back wall.

The cupboard below the drainer contains the slide-out cutlery tray, and the area below this houses the Whale water heater. Adjacent to this is a switch which controls the under worktop lights.

On the Trident, the pillar between the two offside windows houses the Whale space heater controls. The panel above the windows incorporates the master electrical control panel, which controls all the vehicles electrical services, the Whale water heater controls, a 230V socket, a 12V socket and TV cable connectors.

On the Trooper, the Whale water and space heater controls are located on the front face of the wardrobe, whilst the other fittings, as the Trident, are fitted to the pillar between the windows.

Wardrobe

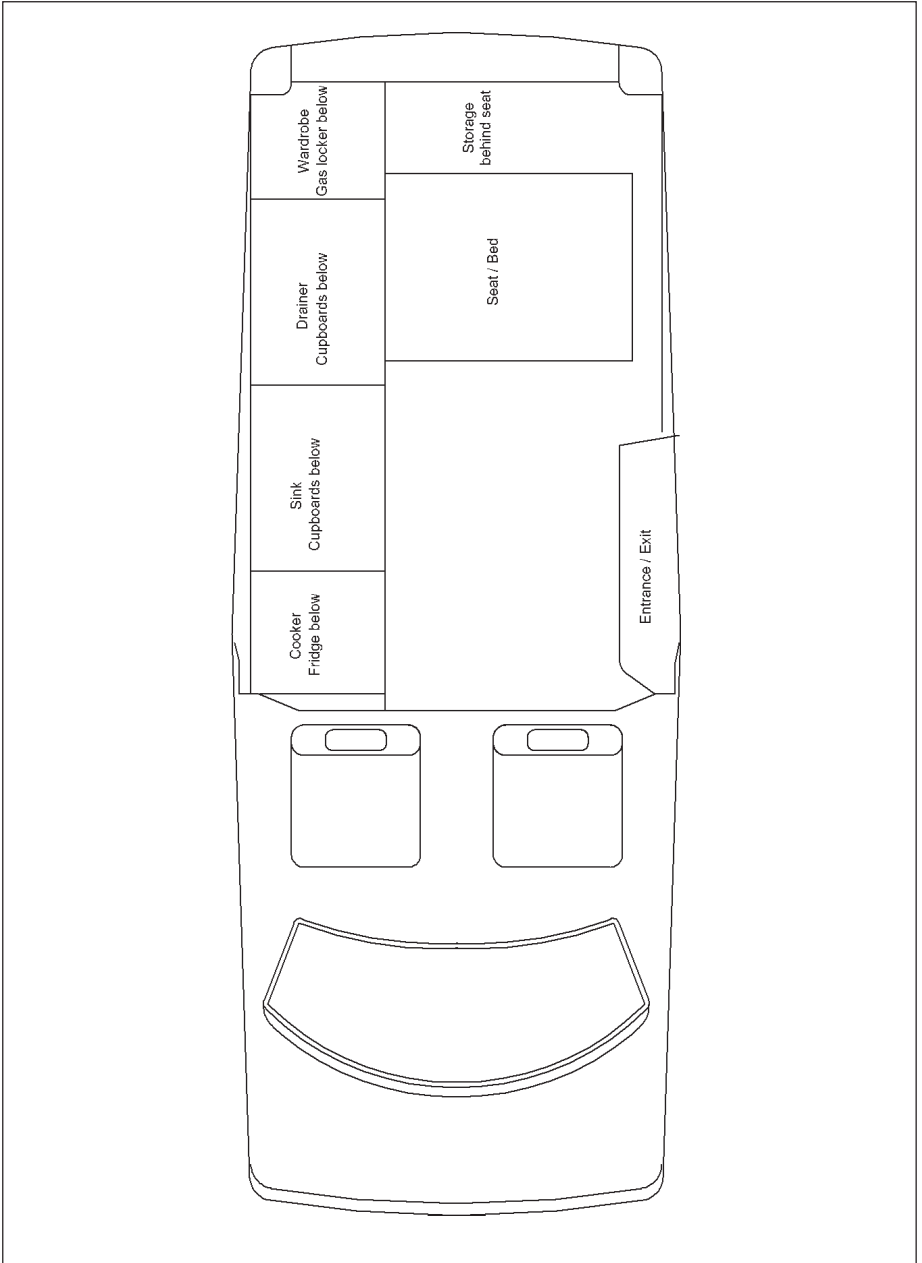
The wardrobe is situated in the offside rear of the vehicle, with access through a sliding door above the kitchen unit. The cupboard below the wardrobe is accessed when the tail gate is open, and contains the red isolation taps for each of the gas appliances. For explanation of the symbols on each tap, please refer to page 7-7.

Miscellaneous

Lighting in the vehicle is provided by a fluorescent strip light on each side and an LED light at the front and rear. All lights are individually switched and there is a switch



ARRANGEMENT OF EQUIPMENT (TRIDENT/TROOPER)





above the side door to aid entry to the vehicle. The Trident has two additional oval fluorescent light fitted to the front and rear roof areas.

A fire extinguisher is fitted behind the passenger seat. There is a smoke alarm and carbon monoxide alarm fitted in the roof.

Storage

Storage is provide by the cupboards within the kitchen unit. Additional storage is available in the drawer under the rear seat and also in the space behind the rear seat.

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

Double bed

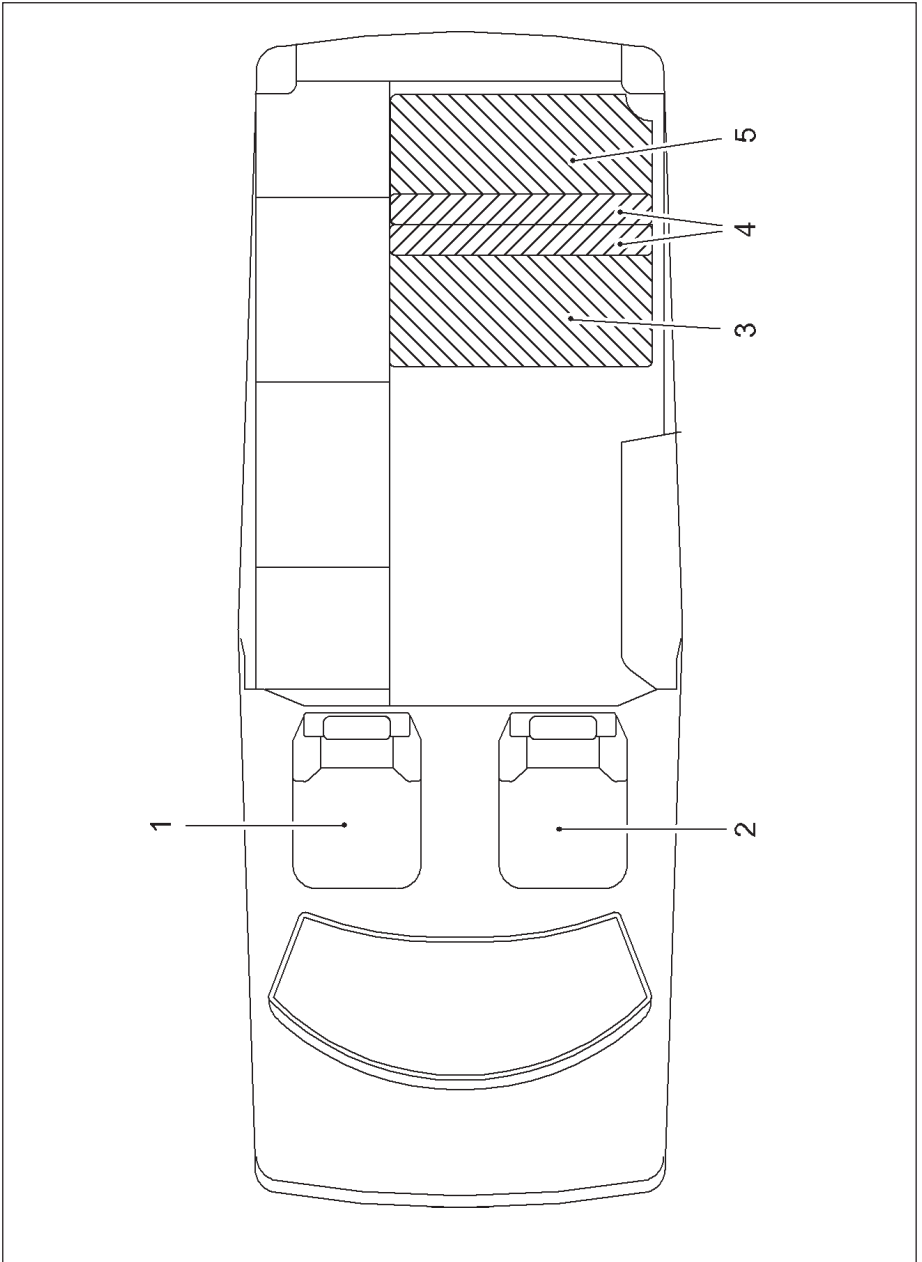
To make the bed, release the locking mechanism and pull the seat base out to its fully extended position. The cushions will automatically assume their correct positions.

For converting the bed back into the seat, push the front of the bed until the seat reforms and the locking catch engages.

Ensure that the seat belt webbing does not become entangled during the folding process.

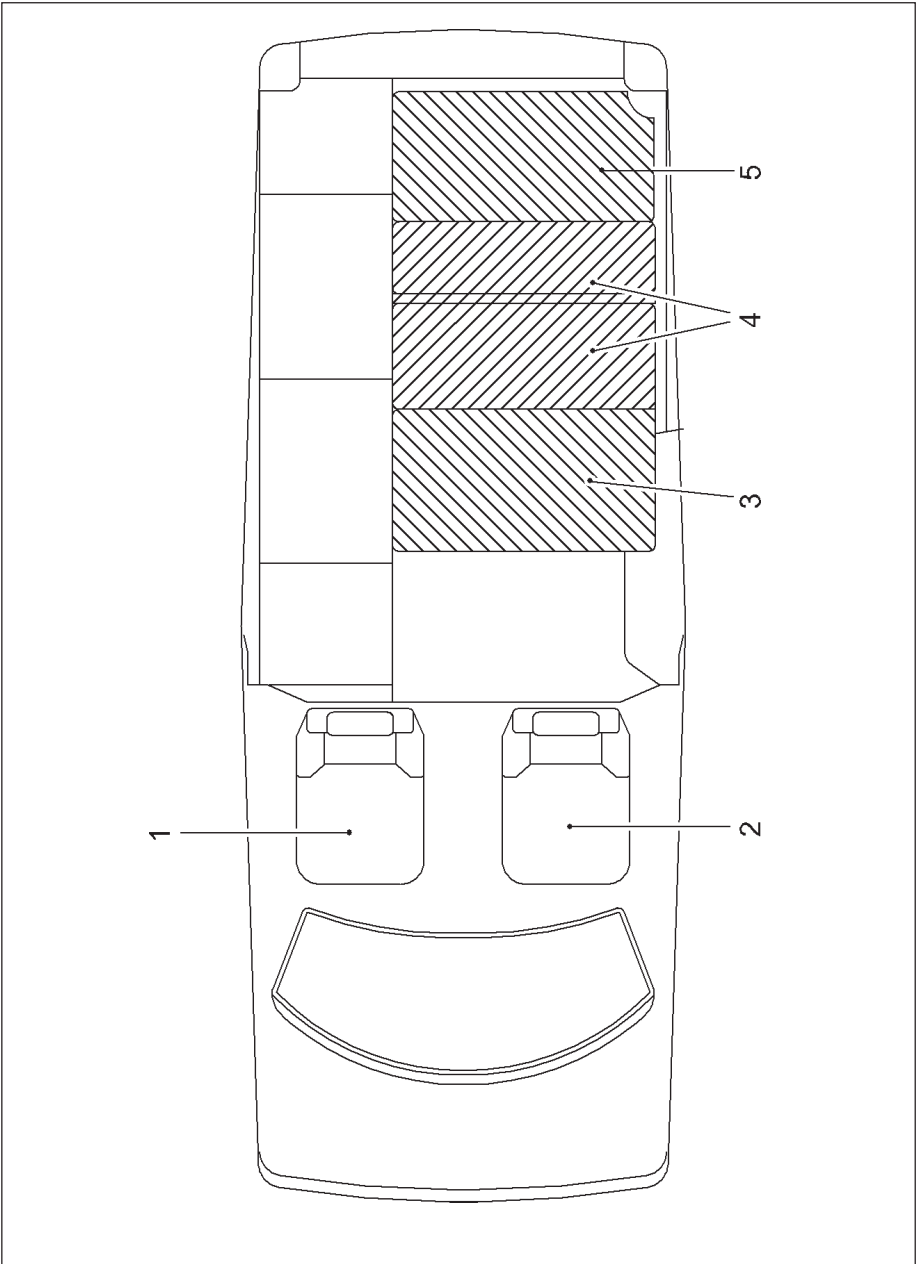


NORMAL SEATING ASSEMBLY (TRIDENT/TROOPER)





DOUBLE BED ASSEMBLY (TRIDENT/TROOPER)





EQUIPMENT ARRANGEMENT

ELEVATING ROOF

The elevating roof of the Trooper LL must be raised when the vehicle is being used for habitation purposes, in order to provide adequate ventilation.

To raise the roof undo the two lock down straps at the forward edge of the roof, then grasp the two handles inside the roof and push vertically upwards. The gas struts will assist the roof to rise to its fullest extent and keep the canvas taut.

To lower the roof reverse the above process and pull the roof down, ensuring that the canvas is tucked inside the roof edge.

Ensure that both the lock down straps are securely fastened before moving the vehicle. Under no circumstances must the vehicle be driven without these straps being secure.

Ventilation

The Trident is fitted with a Seitz Heki roof ventilator in the main living area which can be raised or lowered to the required height.

On models with an elevating roof, the roof must be raised when the vehicle is being used for habitation purposes, in order to provide adequate ventilation. The Trooper Low Line has a mesh vent near the roof of the canvas front panel.

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

Heki Roof Light (where fitted)

The Seitz Heki 3 is operated by a rotating handle which means it can be opened to any required position. It incorporates a separate sliding flyscreen and night blind which can operate even if the ventilator is left open. When the vehicle is being driven the ventilator should be fully closed. Wind noise may be reduced by closing the night blind.

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 68 AH, 12V vehicle 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.

Electronic Control System/Battery Charger

A Sargent EC155 Power Control System is fitted. It features a built in battery charger, an LED control panel to provide intelligent control of the 12V equipment and built in over-discharge software to protect the batteries. For a full description of this unit including operating instructions and fault finding, refer to the Connection of Services section.

Electrical - General

A 230V AC socket is fitted, more suitable for medium demand components such as a television or hairdryer. Safety/overload protection is provided by the MCB located in the electrical control box at the back of the lower kitchen 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 hookup cable, provided as standard with the vehicle, is stored in the bottom of the wardrobe.

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, which can be fitted to the tailgate without drilling the vehicle.
- Towbar. The VW standard towbar is recommended for fitment to these vehicles.



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 box. To maintain the habitation battery in good condition it is recommended that it is trickle charged about once a month.

VW 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 VW 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. For full instructions, refer to the VW hand book and look in the index for the section entitled 'Battery/Charging'

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 GAS SAFE registered technician.

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

12V TROUBLESHOOTING CHART

Symptom	Cause	Remedy
Habitation 12V does not operate	Main 20A fuse blown	Check/Replace
	Battery Discharged	Recharge
	Switch on control panel in off position	Switch to on
	Vehicle ignition 'on'	Switch 'off' ignition
Habitation battery not charging	Main 20A 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
Battery does not hold its charge	Failed battery	Change battery
	Current being drawn	Check all appliances are off when not in use
Battery discharges over a short time with appliances operating	Poor battery cell condition	Electrically test battery
	Failed battery	Change battery
	Battery not fully charged	Fully recharge battery
No power to one or more 12V appliances	Circuit fuse blown	Find fault and replace fuse with same rating
Lights dull/only one tube illuminating	Low battery charge	Check battery
	Faulty light unit/tube	Replace/Check
Water pump not operating	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
No power on 12V socket outlet	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
Cooker ignition not operating	Fuse 3 blown	Find fault and replace fuse with same rating
	Spark unit fault	Refer to dealer
	Fault on cooker unit	Refer to dealer
Fridge gas ignition not operating	Fuse 3 blown	Find fault and replace fuse with same rating
	Ignition control switch fault	Refer to dealer
Fridge ignition switch flashes but gas does not ignite	Fault on fridge unit	Refer to dealer
Ignition can be heard to be sparking but no flashing on fridge switch	Faulty fridge ignition switch	Refer to dealer
Fridge does not operate on 12V when engine is running	Inline fuse adjacent to habitation battery 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
230V system inoperative	No site power	Check site supply
	RCD/MCB switches tripped out	Reset circuit breakers
RCD/MCB keeps tripping out	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
Water heater does not operate on 230V	No power	Switch on isolator/check MCB is on
	Overtemperature trip activated	Wait 10 minutes to cool. Refer to troubleshooting section for water heater
Battery charger does not operate	Charger switched off	Switch on MCB isolator switch and check 6amp MCB is on
Refrigerator does not operate on 230V	Switch on refrigerator thermostat dial not 'on'	Check position of thermostat dial
	Element fault	Refer to dealer

**LPG TROUBLESHOOTING CHART**

Symptom	Cause	Remedy
Appliance will not light	No gas	Fill the bulk tank Check isolation valve is open
	Low battery (auto ignition)	Charge battery
Appliance lights but goes out immediately the FSD override is released	Flame supervision device (FSD) is not functioning correctly	Refer to dealer
Odour	Gas leak	Turn off the gas at the isolation tap and do not use the gas system until the problem has been rectified
		In the event of a leaking cylinder, contact the site warden and/or the local gas supplier
Yellow flame	Lack of primary air. please note yellow tipping to the flame is normal	Refer to dealer
Orange flame	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
Floating flame	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

Note: For more help with water pump issues, please refer to page 7-1 of this handbook.

Symptom	Cause	Remedy
Continuous running of water pump	1. No water	1. Fill tank
	2. Major leak	2. Switch off immediately and check system
Intermittent operation of water pump	Minor leak in water system	Check push fit joints
	Water pump pressure release valve reasserting itself	No action - part of pump design
Water pump does not operate	Fuse 4 blown	Find fault and replace fuse with same rating
Water gauge does not operate	Probe fault	Refer to dealer (check probe connections)
No hot water (230V system)	Overtemperature trip activated	Wait 10 minutes to cool. Refer to troubleshooting section for water heater
No hot water (LPG system)	Heater module not lighting	Refer to dealer
	Igniter not working	Check 12V switched on



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 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 memoir 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

Lifting Mechanism

Gas struts or spring struts should be checked for corrosion (particularly on the piston rods of gas struts), smooth operation when operating roof up and down and to ensure that they support the roof when fully up.

Check attachment points of struts to body and roof.

Canvas side walls

Check for satisfactory attachment to body and roof.

Check for splits or holes, particularly at fold lines.

Check that the canvas stows satisfactorily when roof is lowered. (A waterproofing check will be done at the request of the customer).

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 trained fitter trained to GAS SAFE 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

Check condition, fill tank and check for leaks.
Check the external filler and filler pipe to tank.
Check for satisfactory venting.
Check condition and presence of filler 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).

Pump Filter

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 Council for Electrical Installation Contracting) or a member of the Electrical Contractors Association.



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.



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

DEALER:	SIGNED:
	DATE:



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