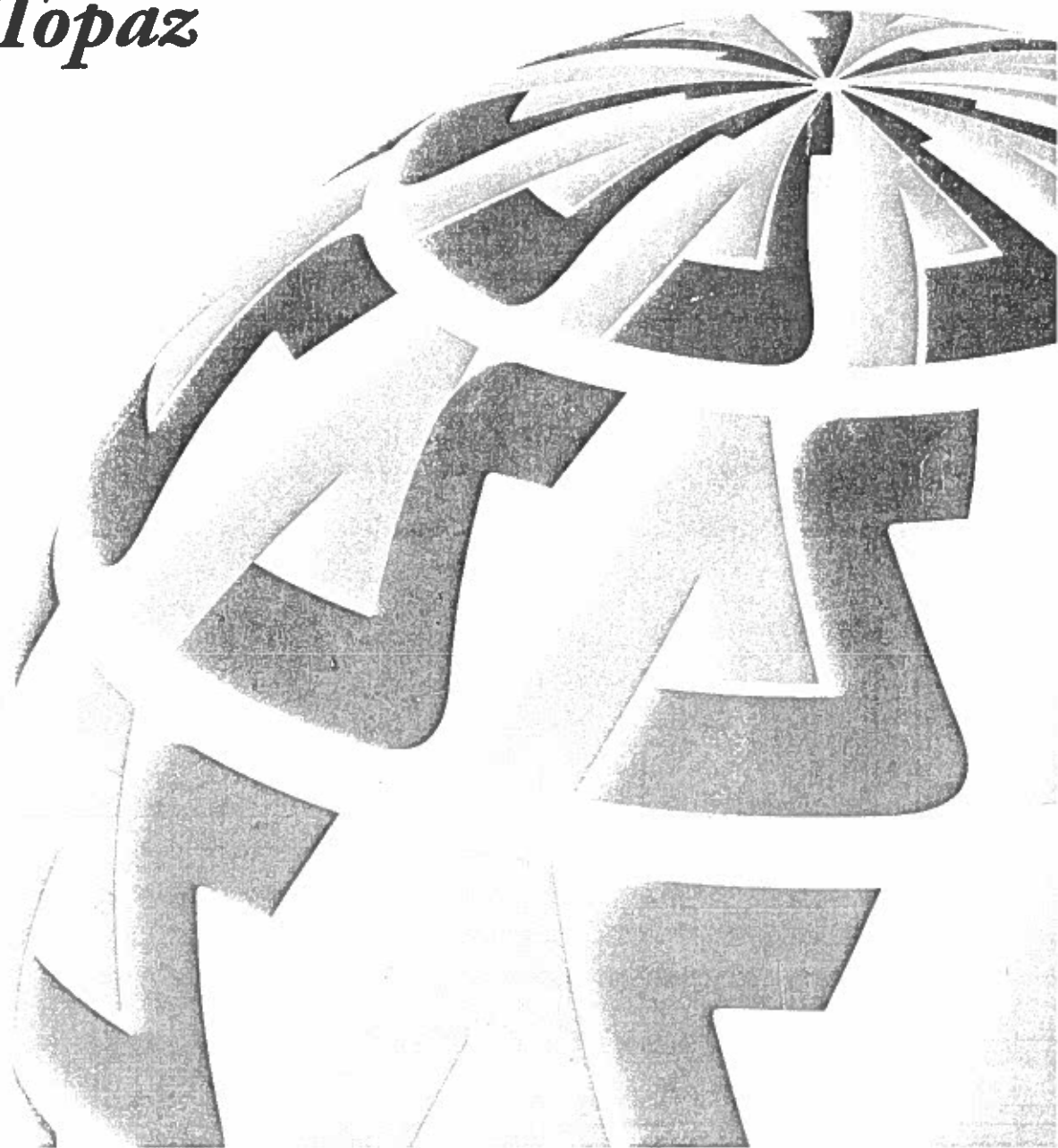




# Auto-Sleeper

INSTRUCTION MANUAL

*Topaz*



# **AUTO-SLEEPER**

## **TOPAZ**

### **CARVER CASCADE WATER HEATER**

In the event of winter conditions  
refer to the Vehicle Instruction  
Book.

## **OWNERS' MANUAL**

May 1994

VIM 015

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The policy of Auto-Sleepers Limited is one of continuous improvement as part of our commitment to quality. The information contained in this manual is not binding and Auto-Sleepers reserve the right to alter any parts, accessories, design and/or details as technical or manufacturing requirements arise.

## INTRODUCTION

CONGRATULATIONS ON YOUR PURCHASE OF AN AUTO-SLEEPER. WE ARE CONFIDENT THAT IT WILL GIVE YOU MANY YEARS OF SATISFACTION.

THIS HANDBOOK HAS BEEN COMPILED TO ENABLE YOU TO OBTAIN THE MAXIMUM PLEASURE FROM YOUR VEHICLE. HOWEVER, SHOULD YOU HAVE ANY PROBLEMS WHATSOEVER, WE WOULD ASK THAT YOU CONTACT EITHER YOUR LOCAL AUTO-SLEEPER DEALER, OR OURSELVES AT THE ADDRESS BELOW, QUOTING THE CHASSIS NUMBER AND AUTO-SLEEPER PRODUCTION NUMBER THAT YOU FIND INSIDE THE FACIA LOCKER.

OUR COMMITMENT IS NOT ONLY TO PRODUCE QUALITY VEHICLES BUT ALSO TO ENSURE YOUR SAFETY AT ALL TIMES. THROUGHOUT THIS INSTRUCTION BOOK THERE ARE REFERENCES TO SAFETY ITEMS WITH WHICH YOU MUST BE FAMILIAR BEFORE USING YOUR AUTO-SLEEPER.

THE TOPAZ CONFORMS TO THE MOTOR CARAVANS CODE OF PRACTICE 201 FOR HABITATION REQUIREMENTS RELATING TO HEALTH AND SAFETY (ISSUE 2 - OCTOBER 1993)

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**SPECIFICATION**1a) **VEHICLE TYPE**

Auto-Sleeper Topaz based on LWB Volkswagen T4 Kombi.

b) **CONVERSION TYPE**

Panel van conversion with two berths, with four seats designated for use whilst the vehicle is in motion. Two upper berths, suitable for children, are available as a factory fitted option.

2) **EXTERIOR DIMENSIONS**

Overall Length	16' 7½"	5065mm
Overall Width (including mirrors)	7' 2¾"	2202mm
Overall Width (excluding mirrors - folded)	6' 4¼"	1935mm
Overall Height	8' 4"	2540mm

3) **INTERNAL DIMENSIONS**

Internal Height (Maximum)	6' 3"	1898mm
Internal Height (Minimum)	5' 9¼"	1752mm
Shower Door Height	5' 4¾"	1641mm

All of the above dimensions are  $\pm \frac{1}{4}$ " (6mm).

4) **WEIGHTS**

a) For the purposes of this manual the mass of the unladen vehicle is defined as:

- coolants	- driver (75 Kg is allowed for a driver)
- oils	- crockery
- 90% fuel	- fire extinguisher
- tools	- gas bottles
- spare wheel	- Carver Cascade water heater
- caravan battery	- Thermostatically Controlled Blown Air Heating System.

b) All other options are excluded.

	2.4 Diesel	2.5 Petrol
Maximum authorised mass	2800	2800
Mass of unladen vehicle	2273	2282
Maximum authorised payload	527	518
The load distribution is:		
Maximum authorised mass of the front axle	1430	1430
Mass of unladen front axle	1273	1253
Maximum authorised mass of the rear axle	1460	1460
Mass of unladen rear axle	1000	1029
Maximum authorised towable braked trailer mass	2000	2000

c) **Towing** The maximum permissible towing nose weight is 100 Kg. For more details concerning towing contact your local Volkswagen dealer.

Note: Please note that when full the fresh water tank adds 68 Kg, the waste water tank adds 34.5 Kg and when full the Carver water heater adds 9 Kg to the unladen weights.

Options and Weights

When these options are fitted the mass of the unladen vehicle is increased by the mass shown against the item of equipment and maximum authorised payload is reduced by a corresponding mass.

- |    |   |           |
|----|---|-----------|
| a) | 3-speed cooling/extractor fan, with a reversible motor<br>in place of the roof ventilator | (1.8 Kg)  |
| b) | Omnimax TV aerial   | (1.0 Kg)  |
| c) | Omnistor 3.0 awning   | (15 Kg)   |
| d) | Pull Out Overcab Bed in place of Fitted Storage Lockers                                   | (12.9 Kg) |

5) RECOMMENDED TYRE PRESSURES

For tyre pressures, refer to the base vehicle instruction booklet. Tyre pressures may need to be adjusted to a small degree from these figures according to the vehicle payload. For all other automotive matters you should refer to the base vehicle instruction book.

6) WATER SYSTEM

Water Tank A 68 litre (15 gallon) fresh water tank is fitted. A triple diaphragm water pump and water heater provides hot and cold water for both the shower head and sink taps. The water system is external filling using non-toxic semi rigid hose. The triple diaphragm water pump is fitted with an over-ride switch in the electrical control panel, and the pump is protected with a 10 amp fuse. A 34 litre (7½ gallon) waste water tank is fitted as standard. *Note: The water pump must not exceed 20 psi rating when the Carver Cascade 2GE is fitted.*

7) GAS SYSTEM

General Two 4.5 Kg Calor Gas cylinders may be fitted in the vented compartment situated at the base of the wardrobe. Metric copper pipe with brass fittings is used for all gas appliances each of which has its own isolator tap. Appliances are designed for use with Butane at 28 mb (11.2") water gauge, or with Propane at 37 mb (14.8") water gauge. Access to the gas compartment is through the hatch situated at the rear of the vehicle (Note: Neither gas bottles nor regulators are supplied as standard).

8) ELECTRICAL SYSTEM

a) The 12 volt electrical system is fed through the second battery (66 amp/hr capacity) which is co-located with the vehicle battery under the bonnet. (For access to both the vehicle battery and second battery, refer to the Base Vehicle Handbook). A 240 volt mains hook-up is fitted for the battery charger, refrigerator (mains operation) and 240 volt mains light.

b) Interior Lighting Interior lighting consists of:

- 1) Three 16 watt fluorescent lights.
- 2) One cab courtesy light.
- 3) Four 10 watt spotlights.
- 4) One 240v mains fluorescent light.

c) 12 Volt Appliances

	Watts	Amps
Twin tube fluorescent light	16	1.33
Water Pump	36	3.0 (running)
Refrigerator	95	8.0
Battery Charger Output (Max)	110	0-6.5 continuous, max 8 am

d)	<u>240 Volt Appliances</u>	<b>Watts</b>	<b>Amps</b>
	Refrigerator	95	0.4
	Battery Charger Input	184	0.8
	Water Heater	660	2.75
	Socket Outlets (Max)	-	10
	Internal Light	8	0.03

9) **BED SIZES**

a) Bed sizes are as follows:

		<b>Length</b>	<b>Width</b>
1)	<u>Single Beds</u> (offside) (Nearside)	5' 11"	2' 4½" 2' 2¼" (pull-out)
2)	<u>Longitudinal Double Bed</u>	5' 11"	5' 0"
3)	<u>Upper (Optional) Bed</u>	6' 3½"	3' 8½"

10) **CLIMATIC USE**

The Topaz is designed and built for use in temperate climates.

11) **HISTORICAL**

The Topaz was launched in February 1994, at the Birmingham Boat and Caravan Show.

**MATERIALS**

- 1) The following materials have been used in the manufacture of your Topaz. Should any of these items be required we ask that you let us know the exact type together with the Auto-Sleeper production number, which is found in the glove compartment of your vehicle. This will enable the correct item to be sent to you as soon as possible.

2) **INTERIOR MATERIALS AND COLOURS**

Cushions	Manadu 31 Prima
Curtains	Antionette Chintz Backcoated
Carpets	Chieftain Anthracite
Lining Material	Dark Blue Velour, Beige Leatherette, Ivory Leatherette
Units	Light European Oak
Unit Work Surfaces	Light European Oak
Shower Lining	Atlas
Shower Curtain	Hadida Savoy Beige

3) **EXTERIOR COLOURS**

Base Vehicle	Volkswagen Grey White R902
Coach Line	Peugeot Blue Galaxy 1427
Coach Lines Roof	Grey Burgundy Pinstripe ½"
	White/Red/White 5/16"
Coach Line Gutter	Blue ¾"
Coach Line Waist	
Lower Panels	Volkswagen Grey White R902

4) **EXTERIOR TRIM**

Wheel Trims	Diesel	15" White Taurus
	Petrol	15" White Taurus

**NOTES:**

*On certain special order vehicles, the above specification may vary to a small degree. If you are in any doubt as to the materials used in the construction of your Auto-Sleeper, please contact the Factory.*



## INTERNAL LAYOUT

- 1) **GENERAL** The design of the Topaz allows two inward facing seats and one forward facing seat in the rear of the vehicle. In addition, both cab seats are fully adjustable and fitted with swivel mechanisms.
- 2) **SEATING ARRANGEMENTS**  
**Cab Seats** Both the cab seats are fitted with headrests and arm rests. Fore and aft movement can be achieved by lifting the locking catch on the outer side of the seat and sliding the seat to the required position. Both seats have reclining backrests, adjustment being by use of the knobs adjacent to the cab walkway. Pull handles are fitted to the rear of each cab seat base to ease the fore and aft movement from the rear of the vehicle.
- 3) **SWIVEL MECHANISM**  
 The driver and passenger seats may be swivelled by lifting the adjustment handle found at the outer side of the seat and rotating the seat to the required position. The swivel will lock into either the forward or rearward facing position; that on the drivers seat is designed to lock in the inward facing position only.
- 4) **CARAVAN SEATS**  
**Offside Dinette** The inward facing dinette is on the offside of the vehicle. The base of this seat may be moved forward by releasing the centre catch. The backrest cushion is attached to the window lower rail for anchorage. When used as a single bed, the settee base moves towards the front of the vehicle and with, infill cushions, a bed is then formed (See page 4.3).  
**Nearside Forward Facing Seat** The nearside forward facing seat may be moved inwards for travelling comfort. In order to move the seat, the locking catch, found at the lower rear inner end of the seat box should be raised, and the seat moved towards the centre of the vehicle. The seat should be moved to its outer locked position when more gangway space is required.
- 5) **SEAT BELTS** Seat belts are provided in the rear of the vehicle as follows:

**Offside Seat** An adjustable lap belt is provided for the forward passenger on the offside seat. When not in use, and when the bed(s) is made up, the seat belt buckles should be placed in the small compartment in the settee backrest panel - this will avoid the buckles damaging the table top surface when the settee is in its fully retracted position.

**Nearside Forward Facing Seat** An inertia reel lap and diagonal seat belt is provided with the nearside forward facing seat. It should only be used with the seat in the inward (travelling) position. Adjustment in length of the short belt may be achieved by lifting the locking clip and lengthening the belt as necessary. Access to this clip is through the base of the nearside bed box.

**IMPORTANT: SEAT RESTRAINT STRAPS ARE FITTED AS STANDARD EQUIPMENT TO ALL FORWARD FACING SEATS. PASSENGERS ARE ADVISED THAT IT IS A LEGAL REQUIREMENT FOR THESE SEAT BELTS TO BE WORN WHILST THE VEHICLE IS IN MOTION.**

**IMPORTANT: ENSURE THAT THE PASSENGER SEAT SWIVEL MECHANISM IS LOCKED IN THE FORWARD FACING POSITION BEFORE MOVING OFF.**

**IMPORTANT: THE NEARSIDE SEAT SHOULD BE IN THE INNER POSITION WHEN THE INERTIA LAP AND DIAGONAL SEAT BELT IS BEING USED.**

- 6) **TABLES** Two tables are supplied. A small dinette table, for use with the cranked table leg stowed behind the backrest of the nearside forward facing seat. It should be stowed with the table base placed in the recess. The cranked stainless steel table leg is stored in the base of the drawer under the offside bed box. A large dinette table is stored behind the offside settee backrest. The table leg, for use with this table, is stored in the compartment immediately below the nearside high table window.

When the tables are required, the legs should first be placed in the appropriate floor mounting and the table then placed upon them. When not in use, the floor mounting hole should be fitted with the appropriate bung.

**IMPORTANT: THE TABLES AND LEGS MUST BE STORED WHEN THE VEHICLE IS IN MOTION.**

- 7) **KITCHEN AREA** The kitchen area is situated at the rear of the vehicle immediately forward of the shower doors. On the offside is the stainless steel sink and drainer unit. Beneath the sink and drainer is a full width storage compartment and the gas/12 volt/240 volt tilt tolerant Electrolux 4217 refrigerator. This incorporates a freezer compartment and is fitted with electronic ignition and flame failure.

Immediately to the right of the refrigerator is a small sliding storage compartment suitable for the storage of bottles and small consumables.

On the offside, opposite the sink and refrigerator unit is the two burner cooker/grill. To the right of the cooker unit is a drawer beneath which is a shelved cupboard, housing in its base the Residual Current Device (RCD) and two Miniature Contact Breakers (MCBs). Immediately above the offside kitchen unit are two further storage cupboards; similar ones are found on the offside of the vehicle. The electrical control panel, through which all 12 volt facilities are connected, is situated at the top of the shower bulkhead.

- 8) **SHOWER UNIT** The shower unit is positioned at the rear of the vehicle access to which is through two sliding doors, or via the rear tailgate of the vehicle. On the nearside is the Thetford Cassette toilet behind which is a storage compartment. Above the toilet is a drop down handbasin fed with hot and cold running water. Adjacent to the handbasin is the shower head and tap assembly, above which is a vanity unit, suitable for soaps and toiletries.

A full length shower curtain affords further privacy as does a blind/flyscreen and curtain fitted to the rear window. A roof light, with flyscreen is fitted; a twin tube fluorescent light is also fitted and a foam backed bound floor carpet prevents damage to the shower floor when not in use.

In the event of the rear door lock becoming inoperative, a small access panel is situated at the centre base of the rear door. By removing the screw caps and thus screws of this panel, access may be gained to the rear door. When the rear tailgate is locked, externally, this may be overridden by use of the opening catch found centrally, and below, the tailgate window.

*Note: The drain to the drop down handbasin may become blocked. This therefore should be regularly checked, and in the event of a blockage the following should take place:*

- a) Remove the four screw cap covers and fixing screws from around the basin unit.
- b) Withdraw unit thus giving access to the catchment tray.
- c) Clean as necessary.

Shower Unit (Continued)

**IMPORTANT: THE GAS COMPARTMENT VENTS MUST BE KEPT CLEAR OF FOREIGN MATTER AT ALL TIMES AND SHOULD BE REGULARLY CHECKED FOR BLOCKAGES OR DEBRIS. GAS BOTTLES MUST ONLY BE STORED AND USED IN AN UPRIGHT POSITION.**

**IMPORTANT: WHEN THE VEHICLE IS IN MOTION, THE SHOWER SLIDING DOORS MUST BE OPEN AND SECURED BY THE TWO RESTRAINING STRAPS THUS AFFORDING VISION THROUGH THE REAR WINDOW.**

- 9) **WATER HEATER** The Carver Cascade 2GE water heater is fitted inside the offside bed box. Refer to the Carver Cascade water heater instruction leaflet for general information. Operation instructions are to be found later in this manual.
- 10) **STORAGE** Storage is provided by cupboards, lockers, a drawer, wardrobe and bed boxes. Further space is available in the overcab area and pelmet storage bays. A storage compartment is also located behind the toilet. Items may also be stored underneath the cab and passenger seats, in the cab door pockets and, in the event of the upper bed being fitted, the side storage pockets adjacent to the upper bed area.

**IMPORTANT: HEAVY ITEMS MUST NOT BE STORED IN ANY OVERHEAD LOCKER OR CUPBOARDS, OR 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.**

**IMPORTANT: AEROSOLS AND HIGHLY FLAMMABLE MATERIALS MUST NOT BE STORED IN ANY COMPARTMENT BEHIND, OR ADJACENT TO, ANY HEATER OR HEAT SOURCE.**

- 11) **SLEEPING ARRANGEMENTS** Topaz is designed as a two berth model, offering the choice of either two single beds, each running longitudinally down the length of the vehicle, or alternatively a double bed, also running longitudinally down the length of the vehicle.
- a) **Single Bed**  
**Offside**
- a) Release handbrake - leaving vehicle in gear (park on level ground).
  - b) Swivel drivers seat to rear facing position and raise armrests. Apply handbrake.
  - c) Remove backrest cushion from offside inward facing settee.
  - d) Remove cushion from between rear of seat box and drivers seat.
  - e) Release locking catch at forward rear edge of settee (immediately adjacent to cab door entrance) and pull out to first position.
  - f) Slide the inward facing settee forward until it meets the cab seats.
  - g) Release catch at centre of inward facing seat and slide to first position.
  - h) Remove lumbar support cushion from behind backrest, fold over and place at rear most end of settee base, adjacent to end of sink/drain unit.
  - i) Place filler cushion, stored under nearside seat locker, on base of drivers seat to give a level bedding surface.

Nearside

- a) Swivel passenger, if necessary, to forward facing position.
  - b) Slide passenger seat fully forward.
  - c) Release press studs holding backrest to wall of unit.
  - d) By releasing lock (at rear base of bed box, adjacent to gangway) slide seat assembly to inner position.
  - e) Release lock, positioned at top of drop down flap, and slide bed mechanism fully forward, at the same time raising the hinged flap, so as to the flat on the rear of the nearside cab seat box.
  - f) Place small infill cushion, stowed in the overcab locker in gap adjacent to forward end of sink unit with tapered side of cushion facing out.
  - g) Place medium sized buttoned infill cushion stored in the nearside underseat locker, on top of hinged plastic panel between passenger seat backrest and forward base cushion.
- b) Double Bed In order to make up the double the following action should take:
- a) Remove folded lumbar support cushion from end of single bed, adjacent to sink unit.
  - b) Slide offside settee seat base to fully extended position.
  - c) Drop backrest cushion of offside settee into space between rear of extended base cushion and offside of vehicle.
  - d) Place small infill cushion (stored between rear of drivers seat and forward end of offside settee) in gap at rear end of offside settee base and sink unit.
  - e) Place folded lumbar support cushion (material uppermost) in remaining space (adjacent to gangway between sink and cooker units).
  - f) Place infill cushion, with support leg extended in gap between cab seats. (Note: Trimmed metal section on this cushion base board is designed to clip into male section on forward end of extended settee base cushion),
  - g) Ensure filler cushions are placed on cab seat bases to make level bed.
- c) Overcab Bed In order to make the overcab bed the following actions should take place:
- a) Release overcab bed retaining straps to allow hinged upright bed board to be lowered onto side rail.
  - b) Remove ladder from overcab bed storage area, and straighten ladder, to allow the ends to meet and clip into each other, making the fully extended ladder.
  - c) Slide the two remaining bed boards rearward, and position onto side rail, ensuring that the bed board fitted with the ladder fixing clips, and bunk net is rearmost.
  - d) Fit extended ladder to the clips provided at the rear of bed board.
  - e) Once in use the bunk safety can be positioned by fitting the bunk net retaining catches to the clips provided, adjacent to the top windows.

**IMPORTANT: SINCE THE OPERATION OF BED MAKING INVOLVES RELEASING AND RE-APPLYING THE HANDBRAKE, IT IS ESSENTIAL THAT THE VEHICLE DURING THIS PART OF THE BED ASSEMBLY HAS A LOW GEAR ENGAGED AND ALSO THAT THE VEHICLE IS PARKED ON FLAT GROUND.**

*Note: Bed making and the storage of cushions when the bed is not in use is described diagrammatically in Annexes C and D.*

12) **WINDOWS**

- a) All lower forward caravan windows and the rear windows (partly concealed by exterior trim panels) are Volkswagen factory fitted units. The high top double glazed windows are fitted during conversion.
- b) The lower forward sliding windows may be operated by first releasing the locking catch and then sliding to the required position. An intermediate locking position is available, affording ventilation with security.
- c) The roof windows are opened by releasing the two catches, moving gently, thus allowing the window to hold, in an open position, on the ratchet assembly. In order to close the window, it should first be fully opened, whereupon the ratchet will release allowing the window to close. When in the closed position, the window should be locked by use of its securing catches.

**IMPORTANT: UNDER NO CIRCUMSTANCES SHOULD THE VEHICLE BE DRIVEN WITH THE TOP HINGED WINDOWS EITHER OPEN OR UNLOCKED.**

- 13) **VENTILATION** Topaz is fitted with a four-way roof light, with flyscreen and night blind, in the kitchen area. This is designed to give generous ventilation when required. The four way facility may be achieved by use of the handles in the roof light frame. A further four way roof light, with flyscreen, is located in the shower compartment. The dashboard fresh air ventilators should be open whilst the vehicle is being used as a caravan or whilst an unflued gas appliance burning.

*Note: It is not recommended to travel with the roof vents open.*

- 14) **BLINDS AND FLYSCREENS** The lower caravan windows and high top windows are fitted with roller blinds and flyscreens. These may be used in either role or alternatively combined to offer a blind/flyscreen facility as required. In the event of a blind or flyscreen becoming slightly stiff or not retracting fully, a small application of silicone based oil onto the roller mechanism will improve the blind/flyscreen operation.

## OPERATING INSTRUCTIONS

1. **GENERAL.** All appliances fitted to the Topaz have been thoroughly checked and assessed by our Development Department, in conjunction with the appropriate manufacturer. Before using them you should refer to the appropriate section in this Instruction Book as well as to any accompanying manufacturer's literature. All warranty certificates should be completed and returned to the relevant manufacturer. The Registration Card, that is found in the Vehicle Instruction Pack, should be returned to Auto-Sleepers immediately.
  
2. **GAS SYSTEM.** The gas cylinder compartment is located beneath the wardrobe access being via the raised vehicle tailgate. Gas bottles are anchored by the use of restraining straps. The gas cylinders and regulator are not supplied with vehicle. The system will run on both Propane and Butane. We recommend the use of Propane. The gas cylinder compartment allows two 4.5 Kg cylinders to be fitted.

Regulators should be of the type appropriate to the gas being used.

**IMPORTANT: HOSE CLIPS MUST BE USED ON ALL FLEXIBLE HOSE CONNECTIONS. THE HOSE USED MUST CONFORM TO BS 3212/1.**

**IMPORTANT: THE GAS BOTTLES, WHEN FITTED, MUST BE SECURED BY USE OF THE RESTRAINING STRAPS.**

**IMPORTANT: RUBBER SEALS AROUND THE GAS LOCKER DOOR SHOULD BE INSPECTED ANNUALLY AND REPLACED AS NECESSARY.**

**IMPORTANT: GAS BOTTLES MUST BE STOWED ONLY IN THE UPRIGHT POSITION.**

**IMPORTANT: THE FLEXIBLE RUBBER HOSE THAT CONNECTS THE GAS BOTTLES TO THE BULKHEAD FITTING IS DATE STAMPED - THIS REPRESENTING THE DATE OF MANUFACTURE. THIS HOSE MUST BE REPLACED ANNUALLY, ON, OR BEFORE THE DATE STAMPED UPON THE HOSE.**

The gas appliances are rated as follows:

Refrigerator	0.205 Kw
Space Heater	1.6 Kw
Water Heater	1.2 Kw
Cooker/Grill	1.5 Kw (per burner)

When replacing the gas line hose, a length of Neoprene hose 5/16" bore and 1/8" wall thickness (British Standard 3212 Part 1) will be required.

**Isolating Taps.** Isolating taps are to be found on the front face of the offside of the wardrobe.

The order of taps from top to bottom, are:

Top	.....	Cooker
Upper Centre	.....	Water Heater
Lower Centre	.....	Propex Hot Box
Lower	.....	Refrigerator

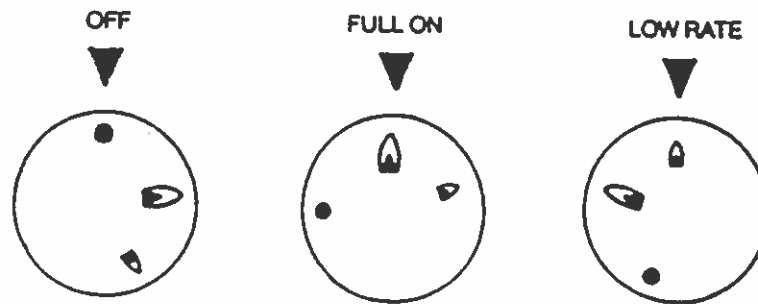
**NOTE:** Each appliance is in the 'ON' position when the tap lies in the horizontal position.

**IMPORTANT: ALL GAS APPLIANCE SHOULD BE EXTINGUISHED, RELEVANT GAS ISOLATION TAPS SWITCHED TO THE "OFF" POSITION, THE VEHICLE IS BEING REFUELLED.**

3) **SPINELLO MK 12 2 BURNER GRILL AND HOTPLATE (ELECTRONIC IGNITION MODEL)**

Operation

a) Burners - each burner is controlled individually and monitored by a flame failure sensing device. The respective knob positions are shown in Fig 1. as follows:



To light the burner, depress and turn the knob anti-clockwise to the full rate position. Hold the knob depressed and apply a light to the burner. It is necessary to hold the knob depressed for approximately fifteen seconds after the burner has lit to allow the probe to reach temperature. Should the flame go out when the knob is released, the procedure should be repeated holding the knob depressed for slightly longer. If required the knob can be turned further anti-clockwise to simmer position.

To turn the burner off, rotate knob fully clockwise until the dot on the knob lines up with the dot on the fascia. The burners on this appliance have fixed aeration and no adjustment is required. Although each burner will support pans from 10 to 18cm, care should be taken not to overload the hotplate as reduced performance may result. When using small pans, the flames should not spread beyond the base of the pan as this will reduce the efficiency of the burner.

b) Grill - Although the grill does heat up quickly, it is recommended that a few minutes preheat be allowed. The grill pan should be left in position to protect the base lining. The grill pan trivet can be reversed to give a choice of grilling height.

c) Safety - It is important that ordinary safety precautions be observed in the use of this appliance.

When cooking, keep children away from the vicinity. Turn pan handles inwards so they cannot be caught accidentally. Never leave fat or oil unattended on the hotplate. When finished, check that all controls are in the off position and turn off the gas supply at the cylinder.

If a smell of gas becomes apparent, the supply should be turned off at the cylinder IMMEDIATELY. Never check for leaks with a naked flame, leak investigation should be carried out using a leak detector spray or soapy solution.

d) Maintenance - This appliance needs little maintenance other than cleaning. All parts should be cleaned using warm soapy water. Do not use abrasive cleaners, steel wool or cleansing powders. When cleaning the burner ring it is essential to ensure that the holes do not become blocked. The control knobs are a push fit and can be removed for cleaning. They are interchangeable without affecting the sense of operation.

THIS APPLIANCE MUST NOT BE MODIFIED OR ADJUSTED UNLESS AUTHORISED AND CARRIED OUT BY THE MANUFACTURER OR HIS REPRESENTATIVE.

NO PARTS OTHER THAN THOSE SUPPLIED BY THE MANUFACTURER SHOULD BE USED ON THIS APPLIANCE.

- IMPORTANT:**
- 1) **ONLY USE COOKER AND GRILL WITH LIDS OPEN AND SPLASH PLATES IN THE RAISED POSITION.**
  - 2) **AFTER USING COOKER ALLOW TO COOL BEFORE CLOSING LID AND GRILL FLAPS.**
  - 3) **COOKING APPLIANCES SHOULD NEVER BE USED AS A SPACE HEATER.**
  - 4) **ALWAYS ENSURE THERE IS AMPLE VENTILATION WHEN USING THESE APPLIANCES.**

4) **THERMOSTATICALLY CONTROLLED BLOWN AIR HEATING SYSTEM**

a) **General.** The Topaz is fitted with a Propex 1600W fan assisted heater which is situated in the rear of the offside bed box. The heater is of the room sealed combustion type, exhausting all products of combustion to the outside of the vehicle. This feature, along with electronic ignition and flame failure protection system, ensures complete safety of operation. The gas isolation tap is situated in the wardrobe (lower centre tap).

b) **Instructions for Use.** Turn the thermostat to the desired temperature and switch the unit on by use of the switch adjacent to the temperature selection knob. If it is the first time the unit has been operated, or a gas cylinder has been changed, more than one start cycle may be necessary to purge air from the pipework. To recycle heater, simply turn heater off then on again. The heater will then continue to operate automatically on the thermostat. The control unit is provided with two indicator lights so that the following conditions can be recognised:

Burner On - That the unit is switched on and operating correctly.

Lock Out - That a fault has occurred and the unit will not attempt to restart until action is taken to check system and switch recycled.

5) **ELECTROLUX RM 4217 (TILT TOLERANT) REFRIGERATOR**

a) **Important User Information.** Before use please note the following:

- 1) The refrigerator is designed to be operated by adults. Children should not be allowed to tamper with the controls or play with it.
- 2) Any electrical work required to install this appliance should be carried out by a qualified electrician.
- 3) The refrigerator should be serviced by an authorised Electrolux Service Engineer, and only genuine Electrolux spare parts should be used.
- 4) It is dangerous to alter the specifications or modify the refrigerator in any way.
- 5) Electrolux refrigerators are designed to be used specifically for the storage of edible foodstuffs only.
- 6) There are working parts in this product which heat up. Always ensure that there is adequate ventilation as a failure to do this will result in component failure and possible food loss.
- 7) Before defrosting, cleaning or maintenance work is carried out, be sure to switch off the appliance and unplug it.



- 8) The ice box contains tubes through which the refrigerant passes. If these are punctured this would cause substantial damage and result in food loss. **DO NOT USE SHARP INSTRUMENTS** to scrape off frost or ice. Under no circumstances should solid ice be forced off the ice box. Solid ice should be allowed to thaw when defrosting the appliance. See defrost instructions.
- 9) Frozen food must not be refrozen once it has thawed out.
- 10) Manufacturers' food storage recommendations should be strictly adhered to. Refer to relevant instructions.
- 11) Do not place carbonated or fizzy drinks in the freezer as it creates pressure on the container which may cause it to explode resulting in damage to the appliance.
- 12) Under no circumstances should you attempt to repair the appliance yourself. Repairs carried out by inexperienced persons may cause injury or more serious malfunctioning. Refer to your local Electrolux Service Centre and always insist on genuine Electrolux spare parts.

*Note: Electrolux Service Centres are located through the United Kingdom. In the event of any servicing query consult your local Directory or, alternatively, contact ourselves (Sundry Parts Co-ordinator) who will be pleased to advise you of your local Service Engineer and telephone number.*

b) Operating Instructions

- 1) Controls. The refrigerator can be run off either 240 volt, 12 volt or LP gas. Changing between these modes of operation is carried out by means of the controls on the control panel.

Two rocker switches are used to select the electric power supply, one for 240 volt and one for 12 volt.

Refrigerator temperature is controlled by a thermostat when the refrigerator runs of 240 volt.

The electric igniter discharges sparks over the burner when the control is depressed.

Refrigerator temperature is controlled by a thermostat when the refrigerator runs off LP gas. Please note that the thermostat has no "off" position.

The gas supply to the refrigerator should be shut off by means of a gas shut off valve close to the refrigerator.

The refrigerator is fitted with a safety device which automatically shuts off the supply of gas when the flame goes out. The safety device can be opened manually by depressing the control.

An indicator lamp on the control panel flashes when the automatic igniter attempts to light the burner. Otherwise the lamp is normally off.

Refrigerator (Continued)

- 2) Starting the Refrigerator  
LPG Gas Operation. Make sure that the refrigerator electric power supply is switched off.

Make sure that all valves between the gas container and the refrigerator are open. Turn on the gas control to position 8. Turn on the electric igniter. A ticking sound will be heard and the lamp will start flashing. Depress the safety device control. When the lamp stops flashing the flame is alight. Keep the flame failure monitor button depressed for a further 15-30 seconds.

240 Volt Operation

Turn off the gas by means of the shut-off valve. Set the 240 volt rocker switch to 1 and the 12 volt rocker switch to 0.

12 Volt Operation

Turn off the gas by means of the shut-off valve. Set the 240 volt rocker switch to 0 and the 12 volt rocker switch to 1.

- 3) Winter Operation If the refrigerator has been left switched off in an unheated environment when the outside temperature is below -12°C the cooling unit will become so cold that it cannot be started in the 240 volt or 12 volt modes of operation. In such event the refrigerator must be started on LP gas.
- 4) Regulating the Temperature Once the refrigerator has been started it will take a few hours to become cold.

On 240 volt operation the refrigerator is controlled by a thermostat and the thermostat knob should be set at 3. If a lower (colder) temperature is desired, set the thermostat to a higher figure.

On 12 volt operation the refrigerator is not controlled by a thermostat, the refrigerator works continuously.

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

- 5) Travel Catch Make sure that the travel catch is engaged when the vehicle is on the move.

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.

- 6) 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.*

Refrigerator (Continued)

The 2-star (\*\*) frozen 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 compartment as they could cause frost burns.

Most kind 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 on the individual packings.

- 7) Ice Making Fill the ice tray just below the brim with drinking water and put the tray on the freezer shelf.

It is possible to make ice faster by turning the control knob temporarily to its highest value but do not forget to turn it back to its regular setting afterwards as the refrigerator will otherwise become much too cold.

- 8) Defrosting Frost will gradually accumulate on the refrigerating surfaces. It must not be allowed to grow too thick as it acts as an insulator and adversely affects refrigerator performance.

Check the formation of frost regularly every week and when it about 3mm thick it will be necessary to defrost the refrigerator.

To defrost the refrigerator, turn it off and remove the ice tray and all food items.

If desired, defrosting may be speeded up by filling the ice tray with hot water and placing it in the frozen food compartment.

Do not try to accelerate defrosting by using any kind of heating appliance as the plastic surfaces of the refrigerator might then be damaged. Neither should any sharp objects be used to scrape off the ice.

The defrost water runs from a collector channel down a tube to a drip tray at the rear of the refrigerator where it evaporates. When all the ice has melted, wipe the refrigerator dry and restart it.

Place the food items back inside but wait until the refrigerator is cold before making ice cubes.

- 9) Cleaning the Refrigerator Clean the inside of the refrigerator regularly to keep it fresh and hygienic.

Soak a cloth in a solution consisting 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.

Refrigerator (Continued)

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.

- 10) Turning off the Refrigerator If the refrigerator is not in use for some time:
- \* Turn off the LP gas and electric power.
  - \* Empty the refrigerator and defrost it.
  - \* Clean the refrigerator interior and accessories and wipe them dry afterwards.
  - \* Leave the door ajar. It can be secured in this position by means of the travel catch.
- 11) If the Refrigerator Fails to Work Check the following points before calling a service technician:
- a) That the "STARTING THE REFRIGERATOR" instructions have been followed.
  - b) The refrigerator is level and not tilted in any direction.
  - c) If it is possible to start the refrigerator on any of the connected sources of energy.
  - d) If the refrigerator fails to work on gas, check that:
    - \* The gas bottle is not empty.
    - \* All LP gas valves are open.
  - e) If the refrigerator fails to work on 12 volt, check that:
    - \*The 12 volt supply is connected to the refrigerator.
    - \*The fuse on the 12 volt supply is intact on the control panel.
  - f) If the refrigerator fails to work on 240 volt, check that:
    - \*The 240 volt supply is connected to the refrigerator.
    - \*The fuse is intact.

**IF THE REFRIGERATOR IS NOT COLD ENOUGH IT MAY BE BECAUSE;**

- a) The ventilation is inadequate owing to objects as wire mesh or winter covers blocking the ventilation passages.
- b) The evaporator is frosted up.
- c) The temperature control setting is incorrect.
- d) The gas pressure is incorrect - check the pressure regulator at the gas container.
- e) The ambient temperature is too high.
- f) Too much food is loaded at the same time.
- g) The door is not properly closed.
- h) More than one source of energy is used at the same time.

- 12) Maintenance Inspect the gas hose periodically for cracks or deep chaffing marks. Couplings can be tested for leaks using a soap solution. *Do not use an open flame!* If there is any suspicion of damage, call for a service technician.

Refrigerator (Continued)

It is recommended that a service technician check the refrigerator once a year.

13) Some Useful Hints**Make sure that:**

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

- 14) Guarantee The refrigerator is guaranteed for one full year on condition that it is used in a correct manner and in accordance with these operating instructions.

It is also embraced by a European guarantee as described in the refrigerator literature.

- 15) Service and Spare Parts Service and spare parts are obtainable from your dealer or Electrolux - consult the yellow pages of the telephone directory. Alternatively, a call to Auto-Sleeper will provide you with the necessary contact.

16) Technical Data

a)	Mode of Electricity Operation	-	240v AC 95 watts
		-	12 v DC 95 watts
	Energy Consumption	-	1.6 kWh/24 hours
b)	Mode of Gas Operation		
	Rated Power	-	205 watts
	Energy Consumption	-	0.21 kg/24 hours
	Cooling Medium	-	R717

- 6) **THETFORD CASSETTE TOILET - TYPE C3** The Topaz is fitted with the Thetford Cassette C3 toilet, located in the rear nearside of the shower compartment. The cassette is serviced through the hatch, access to which is through the rear tailgate. This version is connected directly to the caravan water supply therefore, before use, the water pump 12v master switch must be switched on - and after use, if the water supply is no longer needed, switched off. Because of this, the toilet has no water fill funnel and no drain tube assembly.

The toilet section includes a seat and cover, flush and valve blade opener knob, toilet tissue compartment, waste level indicator, built-in toilet fluid storage compartment and a drip tray. The cassette section is located underneath the toilet and is removed for emptying from the outside. A rotating pour-out spout, automatic holding tank vent, air release valve, valve blade, carrying handles and hand grips are incorporated into the cassette.

6) **THETFORD CASSETTE TOILET - TYPE C3 (CONTINUED)**a) **Preparing for Use**

- 1) Add Aqua Kem to cassette for controlling odours. Depress retaining clip.
- 2) Remove cassette by pulling straight out. When cassette hits stop, tilt downward slightly and remove (stop for safety when cassette is full).
- 3) Position tank vertically and swivel pour out spout upward.
- 4) Remove cap. Remove deodorant from storage compartment. Add 100 ml of Aqua Kem or 120 ml of Aqua Kem Bio through pour out spout. Add small amount of water through spout to cover tank bottom. Replace cap and return pour out spout to its original stored position.

*Note: As an alternative deodorant can be added to cassette through the valve blade opening. Hotter weather or longer retention time may require addition of more Aqua Kem.*

*Caution: Do not add Aqua Kem Concentrate or Aqua Kem Bio directly into toilet bowl while cassette tank valve blade is closed. Pressure due to heat and altitude change can build up in the cassette tank causing bowl contents to splash upward upon opening the valve blade, if opened too fast. Before each use, open and shut the cassette valve blade to vent the tank.*

- 5) Slide the cassette, pour out spout facing outside, into the vehicle through access door. Never force insertion or removal of the cassette tank; damage to system can occur.
- 6) Make sure the cassette is secured by the retaining clip. Close and lock access door.

b) **Operation****Flushing**

- 7) Before using the toilet add some water to the bowl by pressing down the flush knob. This avoids marking the bowl. Water will stop flowing when the knob is released.
- 8) To flush after use, press the flush knob down while turning in anti-clockwise direction. The turning motion opens the valve blade, emptying the toilet bowl. This procedure results in the best bowl rinse and most efficient use of water. After flushing, turn the knob in a clockwise direction to close valve blade. The toilet can also be used with the valve blade open, which allows the waste to go directly into the holding tank.

**Toilet Tissue**

- 9) Toilet tissue is stored in the specially designed storage compartment that helps keep tissue clean and dry.
- 10) To replace tissue, remove tissue holder from compartment by pulling up on tissue cover. Hold bottom of tissue holder in one hand and cover in the other, and turn in opposite directions until you hear a click. Pull apart. Place tissue on holder, insert prongs of cover into holder. Hold cover and holder and twist in opposite direction until locked. Aqua Soft Tissue is recommended for best results.

6) **THETFORD CASSETTE TOILET - TYPE C3 (CONTINUED)**c) **Emptying the Cassette**

The cassette capacity is 20 litres and should be emptied when the waste level gauge indicator goes from green to full red. The gauge does not begin to move from green to red until tank is over half full.

*Caution: Do not allow cassette to become overfilled. See trouble shooting section for emergency emptying procedure. To empty cassette be sure that the valve blade is in the closed position.*

- 11) With tailgate raised, open the access door at the rear of vehicle. Depress the retainer clip, pull cassette until stop, tilt and remove cassette.
- 12) Carry the cassette using the lower carrying handle, pour out spout up, to a normal household type toilet or other authorised disposal point. Set cassette in vertical position on the ground and rotate pour out spout upward.
- 13) Remove spout cap. Grasp unit by upper carrying handle nearest to pour out spout. Place other hand on upper rear hand grip so that the air relief valve button can be depressed with thumb while emptying, to ensure smooth outflow of tank contents. When emptying, rinse tank and valve blade area with water.

*Note: Depress air release valve button only when pour out spout is pointed downwards.*

- 14) After preparing for use, slide the cassette into the vehicle. Check to make sure that the retaining clip secures the tank in a locked position. The pour out spout end of the tank should be visible through the access door opening. Add water to the fresh water tank as outlined in "Preparation for Use" section and close access door.

d) **Cleaning and Maintenance**

No routine maintenance is required on the Thetford Cassette Porta Potti. Empty cassette and rinse tank with clear water. Use a mild soap to clear toilet bowl, seat and cover, as well as exterior of toilet unit and cassette.

Do not use strong household detergents or cleaners with chlorine, solvent or acid contents, as they will damage valve seals.

Replace the tank inside holder.

*Note: Pour out spout and vent plug can be removed. Seals should be greased with acid free Vaseline.*

e) **Winterizing/Storage**

The Thetford Cassette C3 is easily winterized for storage. When cassette is not going to be used in winter you should carry out the winterizing of the cassette in the normal procedure of winterizing the vehicle.

Before beginning to drain the water supply system, open the electric valve by pressing down the flush knob while the system is under pressure. Keep the flush knob pressed down while draining the water supply system.

6) **THETFORD CASSETTE TOILET - TYPE C3 (CONTINUED)**f) **Trouble Shooting (Problems - Solutions)**

- 1) *Bowl does not drain when toilet is flushed;*  
Cassette is overfilled.

DO NOT REMOVE CASSETTE. While inside the vehicle turn flush knob anti-clockwise open valve blade and leave it in the open position. Open access hatch. Rotate pour out spout outward. Place appropriate size container under spout cap. Remove cap carefully. Allow bowl contents to drain into container. This will lower the water level in the bowl. Replace cap and return pour out spout to stored position. DO NOT REMOVE CASSETTE. Go inside the vehicle and turn the flush knob clockwise to close the valve blade. Now, the cassette may be removed following the normal removal and emptying procedure.

- 2) *Odours*

Use proper amount of holding tank deodorant specified on bottle.

- 3) *Toilet tissue does not fit into compartment*

Since some tissues are supplied on larger rolls, it may be necessary to use some tissue before storing into compartment.

- 4) *Soiled bowl after flushing*

Partially fill bowl to cover soiled portion of bowl. Next flush will dissolve waste.

*TIP: Leave valve blade open during use.*

- 5) *No power to add water to toilet bowl*

Check cassette safety sensor switch and fuse holder for proper engagement and operation.

*NOTE: Cassette has to be removed to reach switch and fuse.*

Insert cassette and try adding water to toilet bowl.

Toilet can be flushed manually. Add water to bowl from a separate container. Turn flush knob anti-clockwise to open valve blade. Turn clockwise to close valve blade.

- 6) *Cassette cannot be removed*

Check for obstacles under retaining clip. Depress retaining clip several times to check operation. Remove cassette.

Flush knob and valve blade in partial open position. Close valve blade by moving knob clockwise.

***CAUTION: If valve blade is open during cassette removal, severe damage to system can occur. Never force insertion or removal of the cassette tank.***

- 7) *Valve blade mechanism sticks or is hard to open*

Spray light film of silicone on blade.

- 8) *Major unit malfunction*

Contact your Auto-Sleeper dealer.



6) **THETFORD CASSETTE TOILET - TYPE C3 (CONTINUED)**g) **Thetford Warranty**

- 1) The Thetford Cassette Porta Potti is warranted to the original buyer for one year from the date of purchase, provided the warranty card duly completed has been returned to us within 30 days after the date of purchase.
- 2) The warranty covers replacement of parts arising from defects and workmanship and from the inability of the unit to perform its intended function.
- 3) In case of a defect contact your supplying Auto-Sleeper dealer.
- 4) Defects which occurred from misuse, negligence or accident, are not covered by the warranty. In addition, the warranty does not apply if the product is handled **improperly** or if other than the prescribed chemical agents have been used or if the product has been altered in any way or has been repaired by unqualified persons, or if the serial number and/or date has been altered or removed.
- 5) Before returning product or parts they should be cleaned, in order to carry out inspection and repair.
- 6) No other warranty is given and no personal representative is authorised to make any warranty or assume liability by words or action under any warranty other than that is contained herein. The warranty is expressly in lieu of any other expressed or implied warranty of whatever nature and expressly excludes any other further liability.

7) **ELECTRICAL COMPONENTS**

- a) **Battery** The vehicle battery is located under the bonnet of the vehicle. The second battery is fitted adjacent to the vehicle battery.
- b) **Internal Lighting (12 volt)**
  - 1) Double filament 16w fluorescent lights are fitted in the following positions:
    - a) In the roof adjacent to locker above cab.
    - b) In roof to rear of kitchen area.
  - 2) A single filament 16w fluorescent light is also fitted in the shower compartment.
  - 3) Four bullseye adjustable spotlights are fitted to the pelmets, two either side.
  - 4) To replace the tubes of fluorescent lights, the light mounting must first be removed to give access to the tubes.
- c) **Internal Lighting (240 volt)**
  - 1) One 240 volt fluorescent light is fitted in the vehicle roof forward of the roof vent. This light is clearly labelled as a 240 volt unit and it should, under no circumstances, be confused with the 12 volt unit which is similar in appearance.
- d) **Rear Lights**
  - 1) Access to the rear vehicle lights, in the event of a bulb failure, is as follows:
 

**Nearside**

    - a) Raise lid of shower storage compartment. Raise false floor.
    - b) With access to the inner side of the rear light cluster, remove and replace faulty bulb, by removing spring access panel to which bulbs are attached.

Offside

- a) Via base of wardrobe, which will give access to the rear of the light cluster, as shown above.

e) Vehicle Lights

- 1) For details of vehicle lights, refer to the Volkswagen base vehicle instruction book.

- 8) **WATER PUMP** The water pump fitted to the Topaz is located in the base of the wardrobe adjacent to the shower bulkhead.

The water system may be operated by first switching on the water pump master switch on the control panel and then by switching on the appropriate appliance. The flow is controlled by the use of the relevant tap.

The water pump (low pressure 20 psi) is protected by a 10 amp fuse (No 2) in the electrical control panel. (See below)

The water filter, which should be checked at least annually for debris, is to be found attached to the water pump, mounted on the inlet side of the unit.

- 9) **ELECTRICAL CONTROL PANEL** The electrical control panel is situated in the top centre of the shower sliding door frame. It should be noted that the following fuses protect the circuits below:

Fuse No 1 (10 amp)	Lighting Circuit 12 volt
Fuse No 2 (10 amp)	Water Pump
Fuse No 3 ( 2 amp)	Refrigerator ignition, water gauge and battery condition indicator
Fuse No 4 (10 amp)	Omnivent (if fitted)
Fuse No 5 (10 amp)	Extra 12 volt socket DC
Fuse No 6 (10 amp)	Carver Cascade Water Heater Control Unit, Thetford CassetteC3 Electronic Valve, Propex Heater (Hot Box) & Cooker Ignition

<u>Appliance</u>	<u>Loading</u>		
Carver Cascade 2GE Water Heater	660 watts	=	2.75 amps
240 volt AC light (RL9/4)	8 watts	=	0.03 amps
Electrolux Refrigerator RM4217 (240v)	95 watts	=	0.4 amps
240 Volt Socket outlet	Up to 10 amp		

*Note: The 240 v socket outlets are protected by the 10 amp MCB, all other mains appliances are protected by the 6 amp MCB.*

The electrical control panel incorporates the following additional facilities:

- 1) **Battery Condition Indicator Lights** In order to check the battery condition, press the water gauge button (READ) and the battery condition indicator lights will illuminate. Readings should be interpreted as follows:
- 1) **Green** - Battery is fully charged - 12 to 14 volts.
  - 2) **Red** - Battery requires recharging - level has reached 12 volts or below and recharging should take place as soon as possible.

- 2) 12 volt Master Switch This may be used to isolate the caravan electrical system except the refrigerator 12 volt system which operates independently through the vehicle ignition switch.
- 3) Water Pump Master Switch This may be used to isolate the water pump. It should be switched off when the water pump is not in use. (Failure to do so will cause the pump to "hunt" intermittently- caused by the PRV re-asserting itself at regular intervals).
- 4) Water Level Indicator In order to check the water level in the fresh water tank, press the "push" button which will give an illuminated reading on the dial showing the state of the water level. In order to calibrate the gauge, fill the water tank fully, then press, and hold, the "read" button setting the indicator to the "full" position.

#### 10) BATTERY/SECOND BATTERY

Both the main vehicle battery and second battery are fused with a 20 amp blade fuse. It should be noted that this fuse protects the 12 volt circuit to the control panel and caravan electrics only. This fuse is fitted adjacent to the positive terminal of the vehicle battery/second battery, on a fuse terminal block. A 30 amp fuse is fitted, in a terminal block, between the main vehicle battery and the second battery in order to protect against overloading of the second battery charging system.

**IMPORTANT: THESE FUSE RATINGS MUST BE ADHERED TO WHEN REPLACEMENTS ARE NEEDED.**

#### 11) OPERATION AND MAINTENANCE OF SECOND BATTERY

##### a) General

The second battery is charged via the main vehicle battery by the engine alternator. Wired between the batteries is a 30 amp relay which, when the engine is running, allows a charging current to pass to the second battery. When the ignition is turned off, the relay cuts off this isolating the second battery from the main vehicle battery. With the second battery fitted, all auxiliary equipment fitted by Auto-Sleepers is wired through it, thus ensuring the main battery remains charged.

##### b) Maintenance

Terminals should be periodically cleaned and greased. The anchorage of the second battery should be regularly checked for security as well as when the base vehicle is serviced.

#### 12) OPERATION AND MAINTENANCE OF THE ZIG X-3 BATTERY CHARGER

##### a) General

The Topaz is fitted with the Zig X-3 battery charging unit, which will charge and recharge the auxiliary battery by raising its terminal voltage to equal that of the charger which is 13.8 volts. The Zig X-3 is fully automatic and thus access to it is not necessary.

##### b) Operation

When battery charging is required and 240 volt hook-up is available, the X-3 should be switched to the 'On' position and the green indicator light will illuminate as confirmation that the charger is working. The unit is fully automatic and no further action is required.

##### c) Special Features

The unit is capable of maintaining a stable 13.8 volts output even when connected to lower input voltages found in Ireland and the continent within the range 198-264 Vac.

d) Safety Protection

The X-3 is protected by a thermal trip which causes the unit to cut out in the event of a temperature of 85°C being reached or exceeded. When the X-3 cools, the thermostat will allow the unit to operate as before. Further safety features are fitted as follows;

- 1) Input fusing - not user serviceable.
- 2) Over voltage protection at 15.4 volts.
- 3) Current limiting at 8.0 amps.
- 4) Reverse battery protection.

13) 240 VOLT AC MAINS HOOK-UP

The mains circuit is protected by an RCD (Residual Current Device) and two MCB's (Miniature Circuit Breakers). These units are co-located and are found in the shelved storage cupboard under the cooker on the shower bulkhead wall.

Operation of Mains Hook-Up In order to connect the Mains Hook-Up the following should take place:

1. Ensure vehicle RCD is in the "OFF" position
2. Ensure all appliances are in the "OFF" position and no appliance is connected to the 240 volt socket outlet.
3. Connect mains hook-up connector to the caravan inlet.
4. Connect plug to site supply socket outlet.
5. Switch site supply "ON". (If switch fitted).

Operation of RCD With mains hook-up connected the following actions must take place:

1. Switch the main RCD 'ON', (which is in the UP position).
2. Press the test button (located adjacent to RCD switch). This should cause main switch to trip.
3. Return main switch to 'ON' position.
4. Switch the 6 amp MCB (No 1) to the 'UP' position, (ON). This circuit controls the, mains light, refrigerator and water heater fuse switch.
5. Switch the 10 amp MCB (No 2) to the 'UP' position, (ON). This circuit controls the 240 volt socket outlets.

Residual Current Device The Residual Current Device (RCD) consists of two Miniature Circuit Breakers (MCB). These are rated, and protect the following circuits below:

MCB 1 (6 amp)	Fridge (95 watts), Battery Charger (110 watts), Water Heater (240v/660 watts), 240v light (8 watt)
MCB 2 (10 amp)	240 volt Socket Outlet (10 amp)

**IMPORTANT: THE MAINS HOOK-UP LEAD SHOULD BE PERIODICALLY CHECKED FOR DAMAGE.**

**IMPORTANT: DO NOT ATTEMPT TO ALTER OR TAMPER WITH ANY ELECTRICAL EQUIPMENT. CONTACT YOUR AUTO-SLEEPER DEALER FIRST.**

**IMPORTANT: USE OF GENERATORS.**

**BEFORE USING A GENERATOR WITH THIS VEHICLE YOU SHOULD READ THE GENERATOR'S INSTRUCTION/OPERATION MANUAL FULLY, PAYING PARTICULAR ATTENTION TO THE SAFETY AND EARTHING ARRANGEMENTS.**

14) **WATER SYSTEM**

- a) **General** A 68 litre (15 gallons) fresh water tank is fitted. A 34 litre (7.5 gallon) waste water tank is also fitted. The water system is fed by a triple diaphragm water pump and non-toxic hosing is used throughout. The water tank filler is found on the rear off-side of the vehicle.
- b) **Water Level Indicator** The illuminated water level indicator is fitted in the electrical control panel and is operated by the press button adjacent to the gauge. A calibration knob is found adjacent to the water level gauge.
- c) **Water Pump** The water pump is self priming and incorporates its own pressure switch. It is recommended that the water pump master switch be switched off when the vehicle is travelling or unattended. **Please note that running dry the water pump may not blow a fuse, but may seize the pump.**
- d) **Water Filter** The water filter is fitted adjacent to the water pump. This should be checked periodically and cleaned as necessary.
- e) **Water Tank** The water tank is fitted with two breathers; when the tank is full water will escape through these breathers and this should give no cause for concern. The drain tap for the water tank is found above the rear step. We advise that you DO NOT use Milton Sterilising Fluid for the water tanks as 'tasting' may be experienced.
- f) **Waste Tank** The waste tank is fitted to the centre offside of the vehicle. This tank should always be drained before driving away from a site, or as soon as practicable to avoid carrying unnecessary weight. The drain tap is found attached to the outlet pipe and clipped to the vehicle on the offside.

15) **CARVER CASCADE 2GE WATER HEATER**

- a) The Cascade 2 GE water storage heater has a nine litre (2 gallons) capacity. The heater is installed through the lower offside wall of the vehicle with only the flue cowl visible. All the gas operational parts are contained within a single module. Control of the gas operation of the Cascade 2 GE is made from the wall mounted remote control unit. This controller contains both the working and 12 volt DC fuses. On the front are the indicator lights which show the state of the heater. The lights on this controller do not show that mains electricity is being used.
- b) The Cascade 2 GE requires the use of mains electricity which can be used as an alternative to the gas operation or used with the gas to facilitate a faster warm-up. The immersion element can be used on 220 or 240 volt 50 HZ and is rated at 605 and 660 watts respectively.
- c) The temperature of the water on gas operation may be adjusted and is set to give a water temperature of approx 70°C.
- d) Two safety features are included on the Cascade 2 GE these being:
- 1) A pressure relief valve which automatically opens if the internal pressure exceeds 3 bar (44 p.s.i) then closes when the pressure drops.

- 2) A manually resettable thermostat, which can be operated by pressing the reset button that passes through the plastic housing covering the 240 volt workings. Access to this button is as follows:
  - a) Pull offside inward facing dinette seat.
  - b) Remove small trimmed access panel found immediately above Carver Cascade, by lifting out.
  - c) The reset push button (red) is found on the centre inner end of the Carver Cascade.
  
- e) Operating Instructions.
  - 1) **Before Switching On**  
Ensure that the gas is turned on and that the system is full of water ie. water flows from the hot taps.
  
  - 2) Check that the 12 volt supply is connected and switched on. **Do Not** use the battery charger as the only source of supply.
  
  - 3) **To Light The Heater**  
Move the slide switch on the controller downwards. A continuous green light indicates that the heater is working satisfactorily.
  
  - 4) **To Switch The Heater Off**  
Move and slide switch upwards.
  
  - 5) **The Lights Indicate**  
*Green* - the heater is working satisfactory.  
*Green* and *Yellow* - the DC voltage is below the 10.5 volts that is required to operate the heater. Recharge the battery.  
*Green* and *Red* - the heater has failed to ignite or that the heater has gone safety shut down. This is usually due to failure of the gas supply or air is in the gas system after fitting a new cylinder.

*Note: It is important that when the water system is drained, that the sink and shower taps are left in the open position.*

  - 6) Mains Electricity Operating Instructions.  
Ensure that the vehicle is connected to the site mains and the supply is adequate. (The immersion heater uses approx 2.75 amps).
  
  - 7) **To Switch On**  
Switch on the isolation switch. The light should indicate that the heater is working. (The Cascade water heater mains switch is located in the wardrobe).
  
  - 8) Over Temperature - Important  
If the mains electrical supply to the heater is switched on but the heater is not working, the over temperature device may have operated.

- 9) This can be due to:
- a. Switching the heater on without water in the tank. Always check that the heater is full of water before switching on.
  - b. Failure of the normal operating thermostat. Manually reset the overtemperature thermostat by pressing in the button in the centre of the electrical connection box (see paragraph 15a(2)). If the operating thermostat has failed the over temperature thermostat will again trip out. If this occurs **DO NOT USE THE IMMERSION HEATER AND CONSULT YOUR DEALER.**

## 16) WINTERIZATION OF THE WATER SYSTEM

### Water Heater

**IT IS MOST IMPORTANT THAT THE WATER HEATER IS DRAINED IN ORDER TO AVOID THE DANGER OF FROST DAMAGE.**

To drain the heater:

1. Ensure that the gas, 12 volt and 240 volt electrical supplies are turned off.
2. Switch off the water pump.
3. Open the hot and cold water taps in the sink and shower compartment.
4. Remove the drain plug fitted in the heater. This is the large slot-headed plug in the bottom lefthand corner of the outside cowl. When doing this care should be taken not to loose the small rubber 'O' ring that seals the drain plug.
5. When the heater is empty the drain plug and 'O' ring should be replaced. (Please note that it takes a considerable length of time to drain the water heater).

### Water System

The remainder of the water system should be drained by:

1. Emptying the fresh water tank by opening the stop tap fitted in the rearmost face of the tank.
2. Opening the hot and cold water taps in the sink and shower compartment.
3. Turning on the water pump.
4. After water has ceased to flow out of the hot and cold water taps the cassette toilet should be flushed until there is no more water.
5. Turn off the water pump and stop tap in the rear of the tank.
6. Empty the chemical toilet cassette.

**NOTE: IT IS IMPORTANT THAT WHEN THE WATER SYSTEM IS DRAINED THAT THE SINK AND SHOWER TAPS ARE LEFT IN THE OPEN POSITION.**

**NOTE: IN THE EVENT OF THE WATER PUMP BEING REPLACED, THE NEW UNIT MUST NOT EXCEED 20 PSI - OTHERWISE DAMAGE TO THE CARVER CASCADE WATER HEATER MAY RESULT.**

## MAINTENANCE

### Upholstery Maintenance

- 1) Work Surfaces Laminated work surfaces are fitted to all furniture units. Whilst these are hardwearing, hot pans should not be placed directly on these surfaces since damage could result.
- 2) Furniture Furniture should be cleaned with a proprietary furniture polish periodically. Any water marks 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. Final finish may be achieved by using wire wool and wax.
- 3) Soft Furnishings Seats, cushions and other soft furnishings should be cleaned with a proprietary fabric cleaner. It is important that liquid cleaning solvents do not come in contact with cushion piping since the removal of the fabric material will result.
- 4) Curtains It is recommended that the thermally lined curtains are washed at 40°C and not dry cleaned.
- 5) Exterior Paintwork and Fibreglass Exterior paintwork and fibreglass should be regularly washed and polished with a non-abrasive car wax.
- 6) Acrylic Double Glazed Windows Great care should be taken in the maintenance of these windows and only approved materials used for the cleaning thereof.
- 7) Gas Vents All gas vents and flue pipes should be periodically checked for damage and should be kept free from dirt. **IMPORTANT: BLOCKING OF VENTS AND FLUES IS EXTREMELY HAZARDOUS AND SHOULD BE AVOIDED AT ALL TIMES.**
- 8) Gas Flexible Rubber Hoses All gas flexible rubber hoses should be changed annually and must be secured at each end with jubilee clips. When removed they must be replaced with the approved type. **IMPORTANT: ALL FLEXIBLE HOSES MUST BE REPLACED ANNUALLY WITH NEW HOSE TO BRITISH STANDARD 3212/1. THE DATE ON THE GAS HOSE IS THE MANUFACTURING DATE; THEREFORE THE HOSE MUST BE REPLACED ANNUALLY FROM THAT DATE.**
- 9) Gas Installation **IMPORTANT: GAS INSTALLATIONS MUST BE INSPECTED ANNUALLY BY QUALIFIED PERSONNEL. IF IN DOUBT CONTACT YOUR LOCAL AUTO-SLEEPER DEALER. MODIFICATIONS SHOULD NOT TAKE PLACE UNLESS CARRIED OUT BY QUALIFIED TRADESMEN.**
- 10) Seat Restraints **IMPORTANT: SEAT RESTRAINT MOUNTINGS SHOULD BE CHECKED FOR TIGHTNESS ANNUALLY AND RETIGHTENED IF NECESSARY TO A TORQUE SETTING OF 24 NEWTON METRES. 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.**



Maintenance (Continued)**IMPORTANT NOTICES**

***MAINTENANCE AND SERVICING OF THE CONVERSION IS THE RESPONSIBILITY OF YOUR LOCAL FRANCHISED AUTO-SLEEPER DEALER TO WHOM ALL MATTERS SHOULD BE REFERRED IN THE CASE OF ANY QUERIES.***

***THE INTEREST OF SAFETY, REPLACEMENT PARTS FOR AN APPLIANCE SHOULD CONFORM TO THE APPLIANCE MANUFACTURER'S SPECIFICATION AND SHOULD BE FITTED BY THEM OR THEIR AUTHORISED AGENT.***

**Upholstery Maintenance**1) **Cleaning**

Your upholstery should be brushed or vacuum cleaned regularly. Fabrics should be wiped every six to eight weeks with a lint free cloth and fabric cleaning fluid. Velour materials should be dry cleaned at regular intervals.

2) **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 damage.

Whenever possible, avoid exposing the product to direct sunlight which might eventually cause the fabric 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.

3) **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, consult a professional dry cleaning company.

4) **Upholstery Fillings**

All seat and cushion incorporate combustion modified fillings which fully comply with the 1988 Furniture and Fire Regulations.

## SAFETY PRECAUTIONS

### General

- 1) In the interests of safety, replacement parts for an appliance should conform to the appliance manufacturer's specification and should be fitted by them or their authorised agent.
- 2) NEVER use portable heating equipment, other than electric heaters that are not of the direct radiant type, as it is a fire and asphyxiation hazard.
- 3) NEVER allow modification of electrical or LPG systems or appliances except by qualified tradesmen.
- 4) The water heater fitted to this vehicle is of the "room sealed" type, any replacement should be the same ie. "room sealed".

Unflued water heaters should not be used in the motor caravan, to do so would be extremely hazardous.

- 5) Aerosol cans or flammable liquids should not be stored adjacent to the gas appliances or heating appliances.
- 6) Turn off all gas equipment and cylinders/tanks and any other heating appliances before travelling except heaters which are intended for use when the motor caravan is in motion.

***IMPORTANT:*** *Heaters intended to be used when the motor caravan is in motion MUST be turned OFF before refuelling the vehicle or gas tanks/cylinders.*

- 7) Make reference to the Base Vehicle Handbook for matters relevant to the motor caravan as a road vehicle.
- 8) Ventilation openings are located below all the gas appliances and in the base of the gas locker, these openings should be regularly inspected and any mesh covering them, cleaned with a stiff brush to prevent any risk of them becoming blocked.

## **SAFETY PRECAUTIONS**

### **Gas Appliances and Fittings**

- 1) **Operating Instructions**  
Please read the instructions and labels provided with your appliance carefully and keep them handy for future reference. If there is anything that you are not quite sure about - ask your Auto-Sleeper dealer for advice. Make sure you have means of lighting the gas before turning on the supply.
- 2) **Personnel**  
Ensure that you know how to operate the equipment - and never allow anyone other than a competent person to connect or disconnect appliances and regulators.
- 3) **Cylinders**  
Cylinders must be sited away from any heat source, in a well ventilated place and must stand in a stable upright position. It is recommended that Propane is used.
- 4) **Regulators**  
It is important to ensure that the correct type of gas regulator is fitted.

For Propane cylinders and for Butane cylinders having screwed connectors always, before connecting a regulator to a cylinder, ensure that the mating parts are clean, free from dirt and undamaged, and, in the case of Butane regulators, check that the washer is in place on the spigot of the connector and is in good condition. The connecting nut of the regulator must be spanner tightened to the cylinder valve. (Note: The thread is left-handed).

For Butane cylinders with 'switch-on' or 'clip-on' connectors, consult your dealer on the type of adapter or regulator you require and fit in accordance with the manufacturer's instructions.

- 5) **Screwed Connections**  
All screwed connections should be firmly tightened with a spanner. Note that all nuts with notches on the hexagon have a left-handed thread.
- 6) **Awnings**  
Awnings should be so fitted that gas fumes discharging into them do not cause any hazard. (BS 5601 may be helpful in determining any ventilation requirements).
- 7) **Hose and Clips**  
The flexible gas hose should be regularly inspected for deterioration and renewal as necessary with an approved type and in any case no later than any expiration date marked on the hose. Always use hose clips when connecting flexible hose to regulators or LPG nozzles.

Safety Precautions - Gas - (Continued)

- 8) Leaks  
After connecting appliances/regulators, etc. check that there is no leak of gas before use. Propane and Butane have a distinctive smell and a leak can usually be detected immediately by this fact. If a leak is suspected, extinguish all naked lights and close the cylinder valve. NEVER look for a leak with a naked flame, but trace it by smell and confirm by brushing leak-detecting fluid (or soapy water) over the suspected joint. Equipment must not be used until any leak is eliminated.
- 9) Maintenance  
Like any other pieces of equipment, your appliances will need regular servicing and cleaning as directed in the manufacturer's handbooks.
- 10) Turning Off  
After using an appliance it is of the UTMOST IMPORTANCE.  
a) That any valve fitted to the appliance is then closed to ensure that when the appliance is again used the turning on of the cylinder valve does not allow gas to escape from the appliance before being ignited.
- 11) Fire  
In case of fire, try to turn off the cylinder valve, remove the cylinder from the fire and extinguish the fire with a dry compound extinguisher. **(DO NOT USE A WATER JET ON A FIRE OF LIQUID LPG)**. If this is too dangerous call the fire brigade and move all people away from the area.

**IMPORTANT: THE GAS APPLIANCES SHOULD ONLY BE USED WHEN THE VEHICLE IS STATIONARY AND WHEN ADEQUATE VENTILATION IS PROVIDED.**

- 12) Problems  
If you are in any doubt about the operation of the appliance please consult your Auto-Sleeper dealer.

**IMPORTANT: All gas appliances must be extinguished and the relevant gas taps turned to the "off" position when your vehicle is being refuelled.**

**IMPORTANT: It is of the utmost important that any tap fitted to a gas appliance is in the "off" position when the appliance is not in use.**

**IMPORTANT: For safety reasons to not use gas appliances while the vehicle is in motion.**

**IMPORTANT: The refrigerator ignition must be switched off when the vehicle is in motion and whilst it is being refuelled. Whilst the vehicle is being driven, the refrigerator should be operated only on 12 volts.**

## **SAFETY PRECAUTIONS**

### **Electrical Systems**

- 1) **Batteries**  
Battery terminals and connectors should be firmly connected. Battery surfaces should be free of moisture and dirt. Cell tops must be fully tightened if appropriate. When removing a battery always remove the negative wire first. On re-connection, the negative should be connected last. Switch off all appliances and lamps before disconnecting the battery.
- 2) **Fuses**  
Always replace blown fuses with a correct rating equivalent. Fuses rated at 7.5 amp may be replaced with an 8 amp in case of difficulty in purchasing a 7.5 amp fuse.
- 3) **Overload**  
Never overload any electrical circuit especially the 12 volt socket outlet. The rating of equipment should be checked before connection.
- 4) **Shower Compartment Light**  
Ensure that water does not ingress into the light unit.
- 5) **Charger Unit**  
Keep the charger unit well ventilated and never allow material or bags to be in contact with the unit casing since heat is emitted during operation.
- 6) **240 Volt Mains Operation**  
Before connecting supply, ensure that the contacts in both the plug and the socket are clean and dry and ensure also that the hook-up plug is firmly located and locked into the socket. Ensure the RCD is easily accessible at all times.
- 7) **Wiring Diagram**  
Wirings diagrams are found in the rear of this instruction booklet. If in doubt refer to these diagrams and if necessary contact your local Auto-Sleeper dealer who will be pleased to answer any of your queries.

## **SAFETY PRECAUTIONS**

### **Fire**

**IN CASE OF FIRE:            Get everybody out then:**

- 1)     Switch off engine.
- 2)     Switch off fuel/gas/electricity.
- 3)     Raise the alarm and call the Fire Brigade.
- 4)     Tackle the fire if it is safe to do so.

### **FIRE PRECAUTIONS**

- 1)     Children should not be left alone in the motor caravan.
- 2)     Keep combustible materials clear of all heating and cooking appliances.
- 3)     Provide at least one fire extinguisher to BS 5423 the main exit door and a fire blanket next to the cooker. Know how to use them.
- 4)     Check fire precautions on site.

### **Fire Extinguisher**

- 1)     A fire extinguisher is fitted as standard. For maintenance see manufacturers instructions. In the event of replacement, the fire extinguisher must conform to BS 5423.

**SAFETY PRECAUTIONS**

**Gas**

- 1) Never use portable heating equipment, other than electric heaters that are not of the direct radiant type, as it is a fire and asphyxiation hazard.
- 2) Never allow modification of electrical or LPG systems and appliances except by qualified tradesmen.
- 3) Turn off all gas equipment and cylinders when the vehicle is in motion.
- 4) Do not obstruct ventilation.

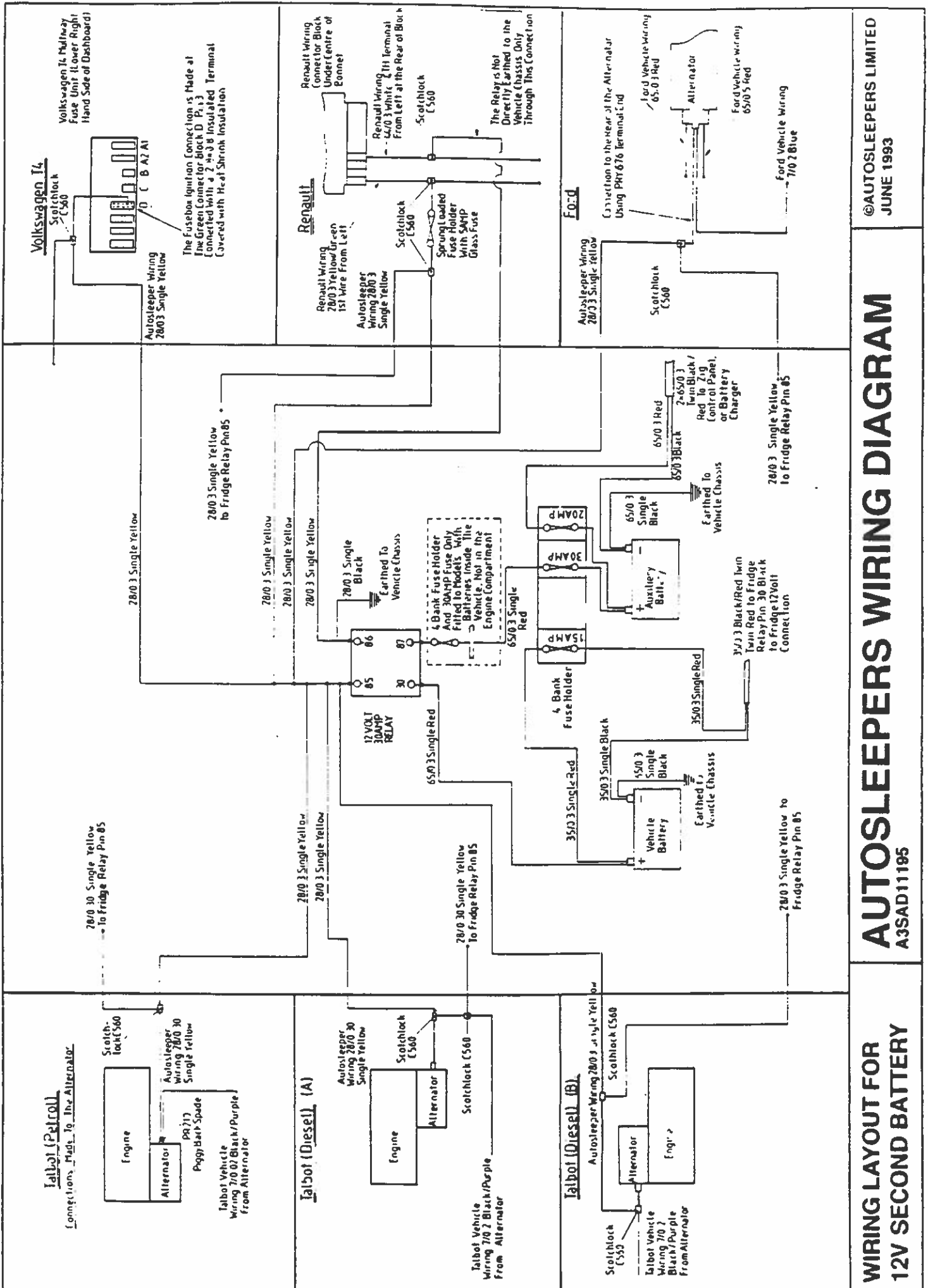
**AUTO-SLEEPER ELECTRICAL FAULT DIAGNOSIS**

<b>Symptom</b>	<b>Cause</b>	<b>Remedy</b>
No power on any 12v circuits	Battery fuse 20A blown	Check fuse. Replace
	Battery connection off Wire off at fuse	Check for secure connections
	Battery flat/very low charge	Check condition of battery Recharge/Replace
Battery not charging	Alternator fault	Replace-/Test for charging.
Second (Aux) battery not charging or holding charge	Fuse blown between van/aux battery	Check fuses/connections
	Relay not functioning	Test relay for operation
	Second battery not earthed	Check for good earth to vehicle chassis
	Aux battery AH rating incompatible	Use equal AH rating Aux battery
Battery fuse constantly blowing	Short circuit	Test for short to earth
	Incorrect fuse fitted - (less than 15 amp)	Check fuse rating must be 20-30 amp rated
	Reverse polarity on battery	Check for correct polarity
Fuse 3 on panel blowing when appliance is plugged into 12v socket	Overload - due to appliance consumption greater than 7.5 amp	Check rating of appliance fit fuse to suit - do not use fuse greater than 12 amp
	Wiring inside plug shorting	Check plug wiring
Water gauge giving full reading constantly	Short at terminal block on gauge wire at water tank	Check wiring on block connector
	Moisture across terminal block terminals causing short to occur	Clean and insulate completely Replace is necessary

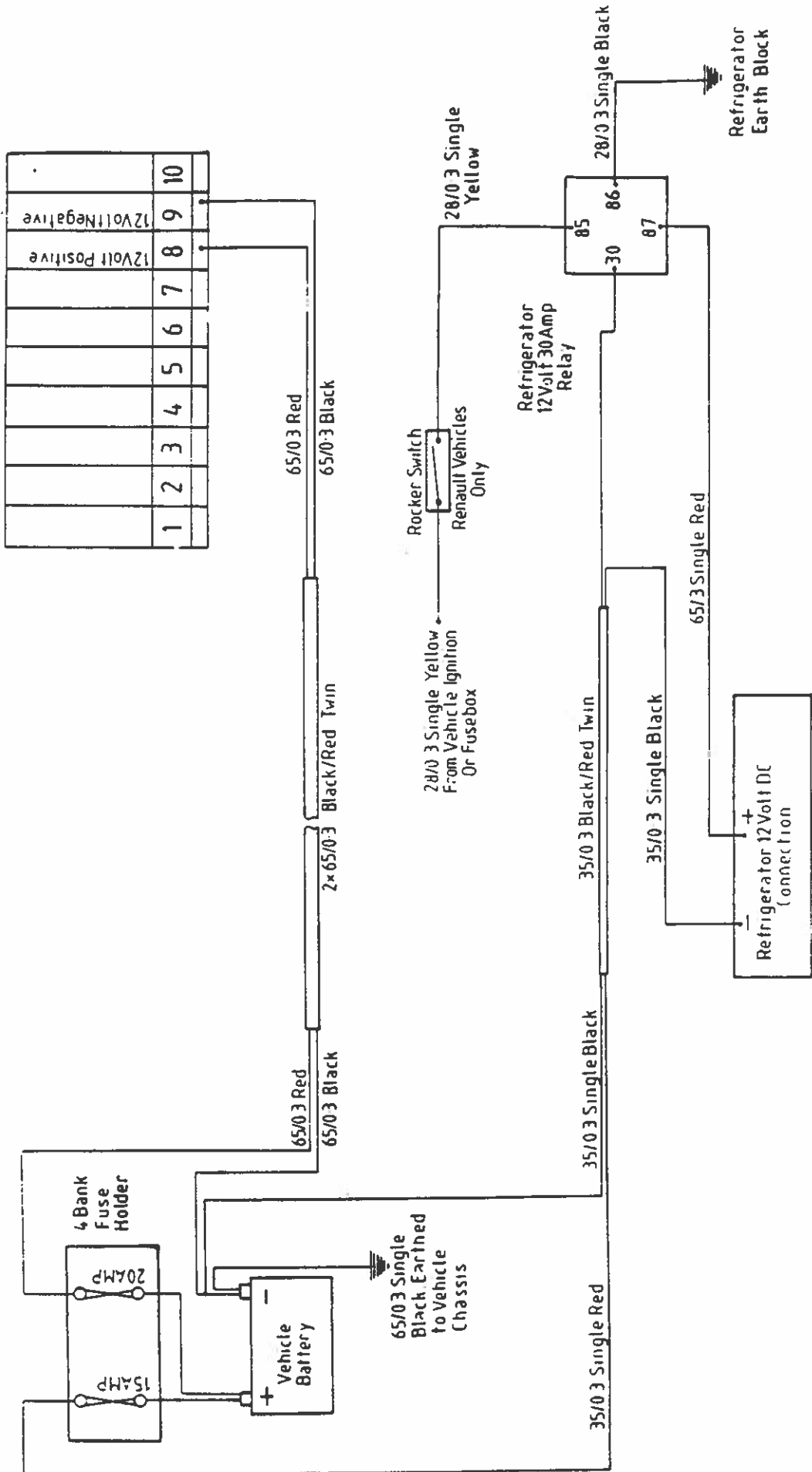


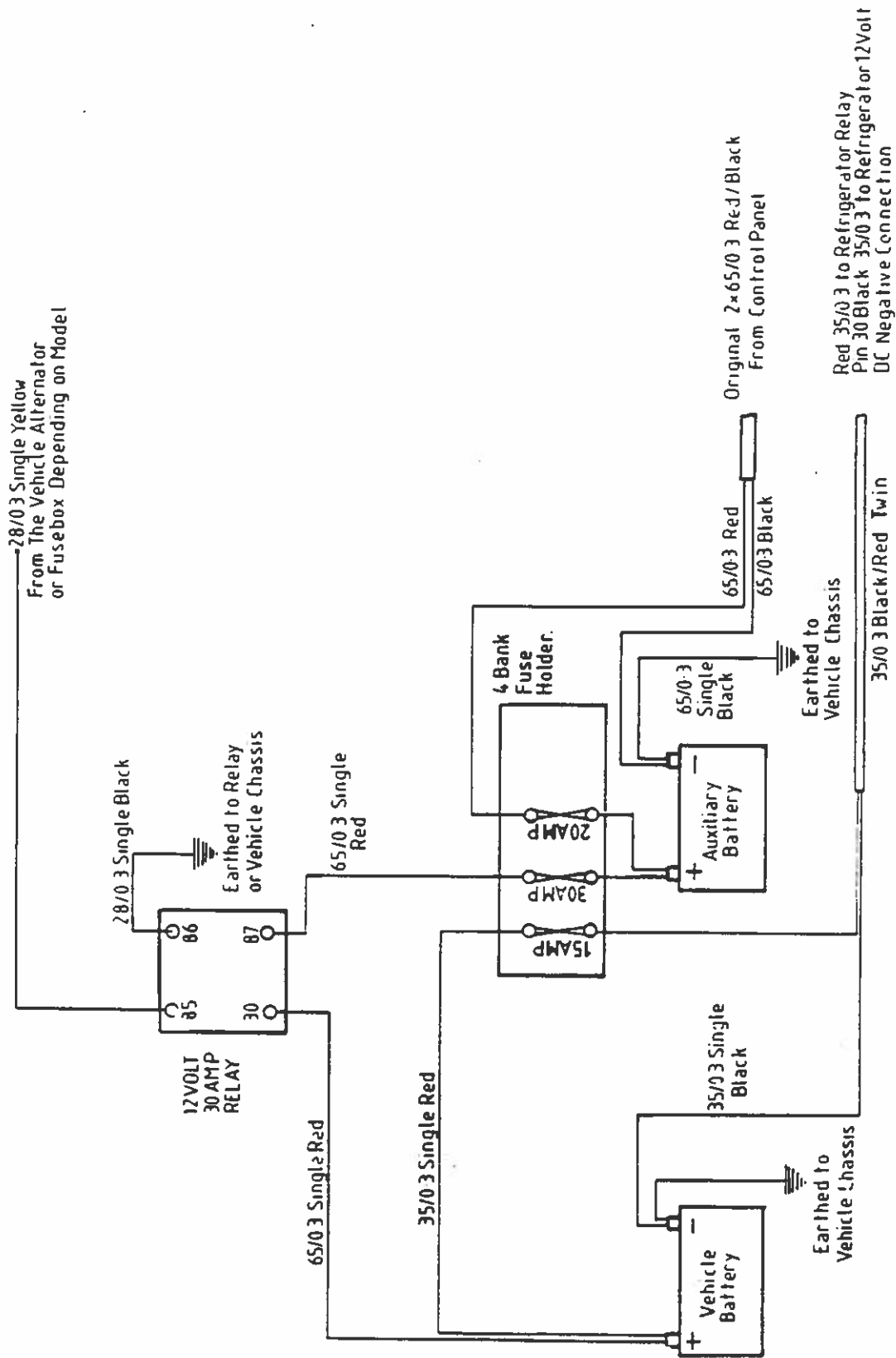
Symptom	Cause	Remedy
Fridge not operating on 12v	Fridge fuse on panel blown	Check fuse
	Relay at rear of panel not operating	Test relay for operation
	Heater element on fridge faulty	
Fridge ignition not operating	Fuse No 2 on panel blown	Check fuse
	Spark unit on fridge faulty	Replace spark unit
	Switch faulty	Test switch for operation
RCD not operating	Faulty RCD unit	Test - switch for operation
RCD constantly tripping unable to reset	Supply fault	
	Incorrect wiring	Check input lead wiring
10 amp MCB tripping	Appliance fault	
	Overload due to incorrect appliance being used	Check for suitability of appliance eg current consumption rating should not exceed 10 amps total.
6 amp MCB tripping	Fault on fridge unit	Check fridge
Charger system		
No power on 12v dc circuits	Overload trip on charger out	Reset trip
Overload trip tripping out	Overload on circuits more than 15 amp being drawn	Test current consumption
	Short on a 12v circuit	Test for short
Red indicator (Batt on charge) off on panel	Battery fully charged	Check condition of battery
	Fault on charger unit	Check charger unit, replace if necessary
	Wiring at charger incorrect	Check wiring
	4 Core cable incorrectly wired at charger panel	Check polarity of 4 core at both points

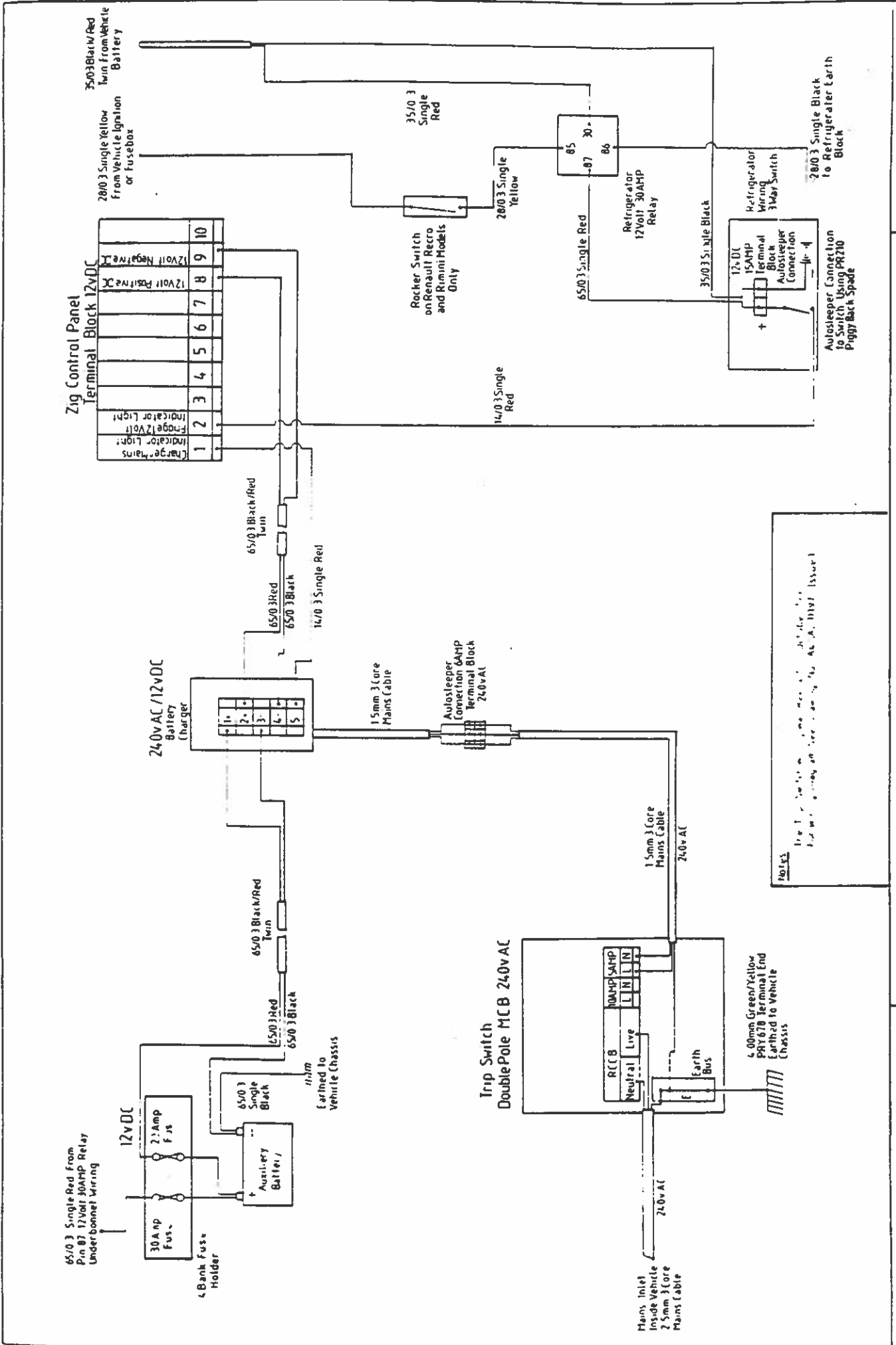
<b>Fault</b>	<b>Cause</b>	<b>Remedy</b>
Red indicator (Batt on charge) off on electrical control panel	Battery fully charged	Check condition of battery
	Fault on battery charger unit	Check battery charger unit replace if necessary
	Wiring at battery charger incorrect	Check wiring
	4 Core cable incorrectly wired at battery charger panel	Check polarity of 4 core at both points



Zig Control Panel  
Terminal Block







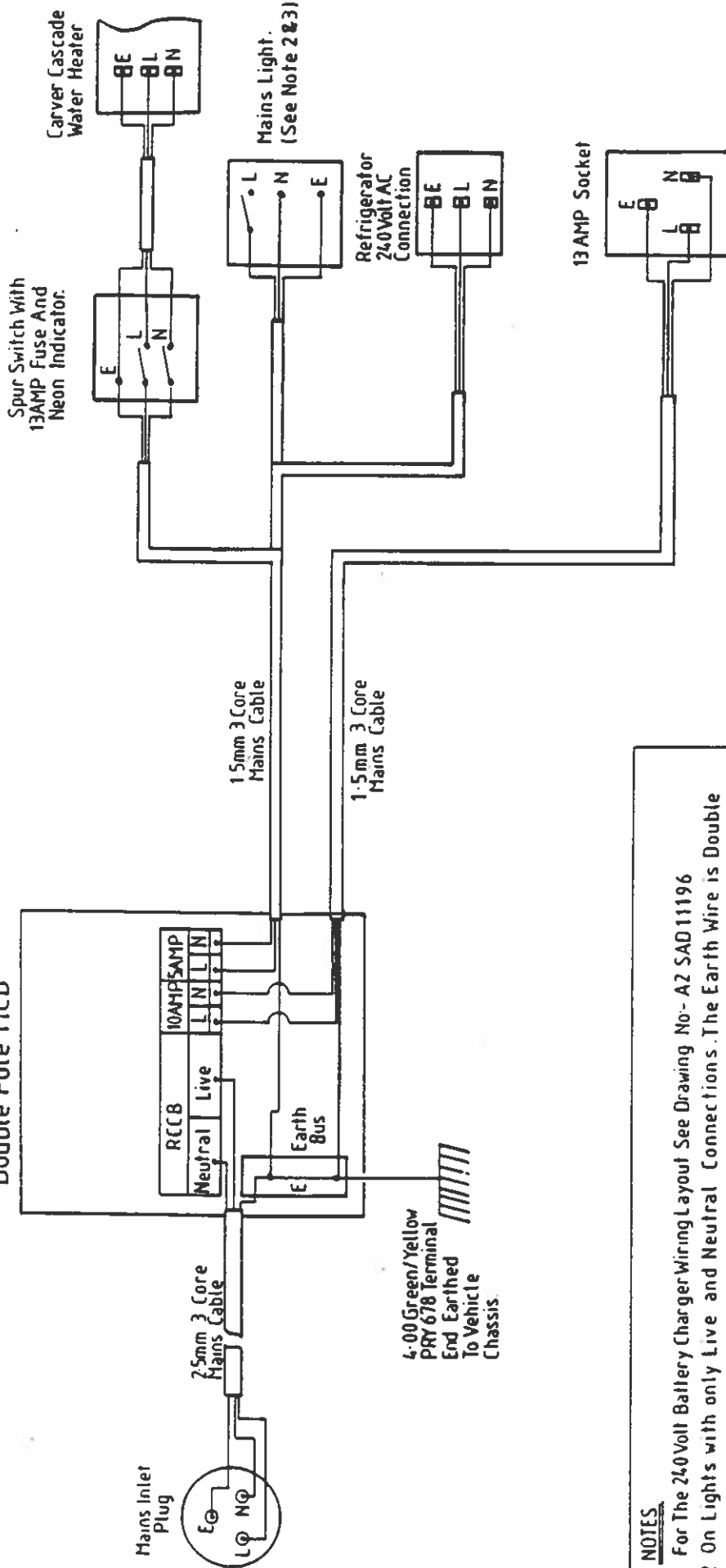
**WIRING LAYOUT FOR BATTERY CHARGER**

**AUTOSLEEPERS WIRING DIAGRAM**

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A2SAD11188

**TRIP SWITCH  
Double Pole MCB**



**NOTES**

- 1 For The 240 Volt Battery Charger Wiring Layout See Drawing No- A2 SAD11196
- 2 On Lights with only Live and Neutral Connections. The Earth Wire is Double Insulated but not connected

**WIRING LAYOUT FOR  
MAINS 240V AC**

**AUTOSLEEPERS WIRING DIAGRAM**  
A3SAD11198

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**Symphony Optional Terminal Block Layout**

6	12 Volt DC Socket (Only)
7	Compact Heater Carver Cascade Extractor Fan Fantastic Fan

**Rambler GL Optional Terminal Block Layout**

6	12 Volt DC Socket (Only)
7	Extractor Fan Carver Cascade Fantastic Fan

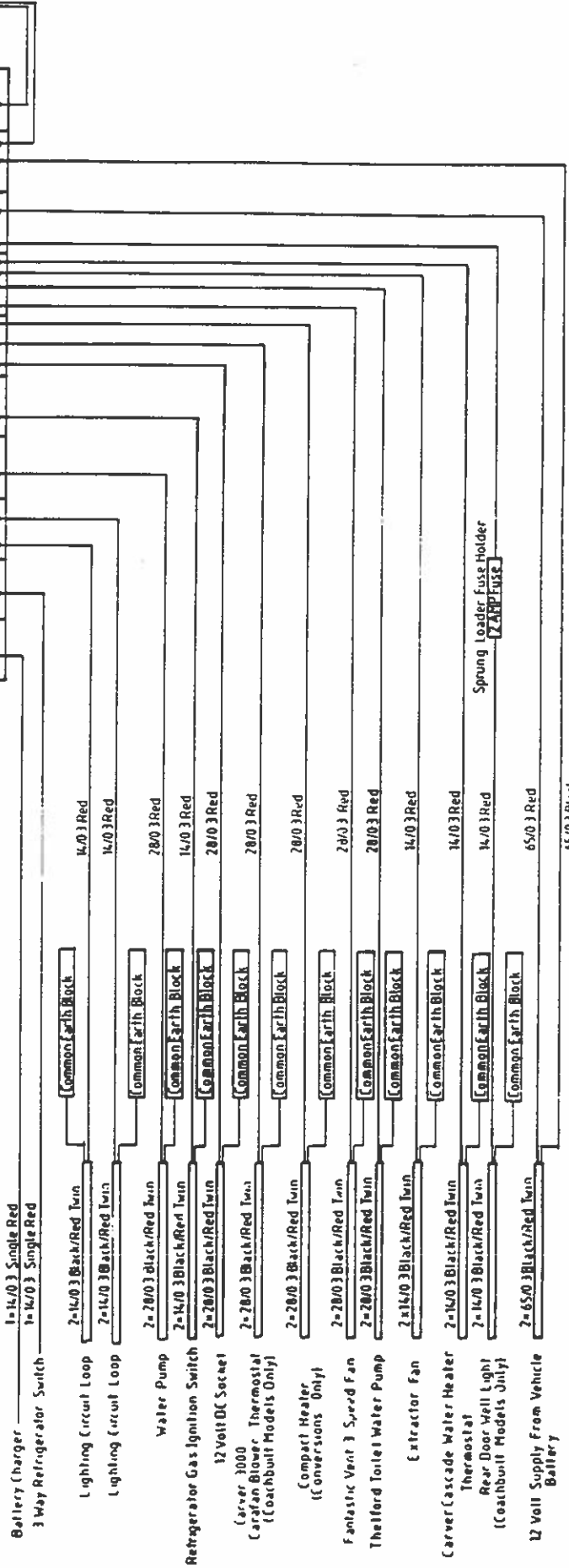
**Harmony Optional Terminal Block Layout**

6	Compact Heater Toilet Water Pump
7	Extractor Fan Carver Cascade Fantastic Fan

**Zig Control Panel Terminal Block**

1	Charger Mains Indication Light
2	Refrigerator 12 Volt Indication Light
3	12 Volt Fluorescent Lights and 12 Volt Spotlights
4	Water Pump
5	Refrigerator Gas Ignition Switch
6	Auxiliary Options
9	Carver 3000 Caravan Thermostat Compact Heater 12 Volt DC Socket
7	Auxiliary Option Fantastic Fan Extractor Fan Carver Cascade Toilet Water Pump
8	+ Positive Supply From Vehicle Battery Rear Door Well Light Positive
9	- Negative Connection From Vehicle Battery
10	Water Tank Probe Water Gauge Probe

2x 12/0-2 Speaker Wire  
Water Tank Probe

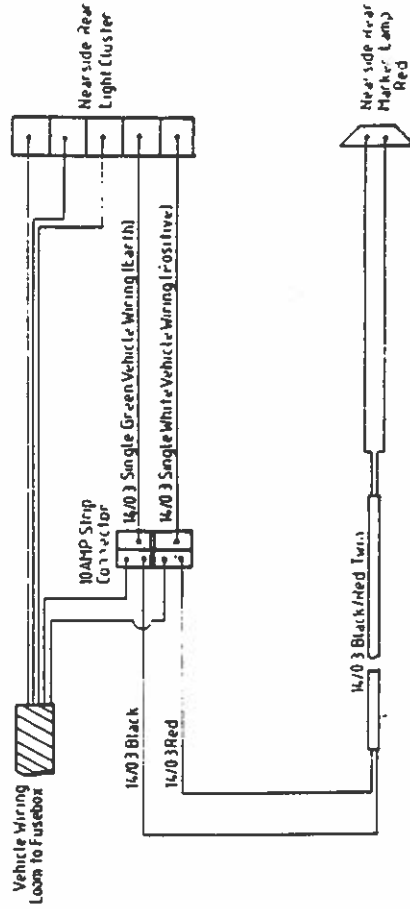
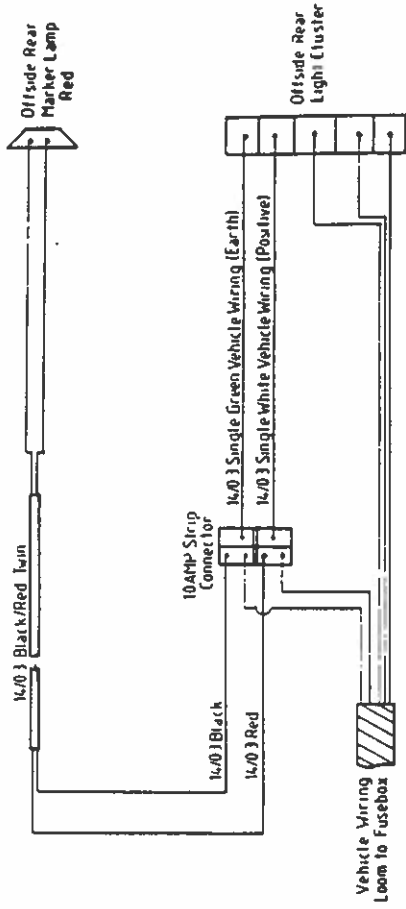
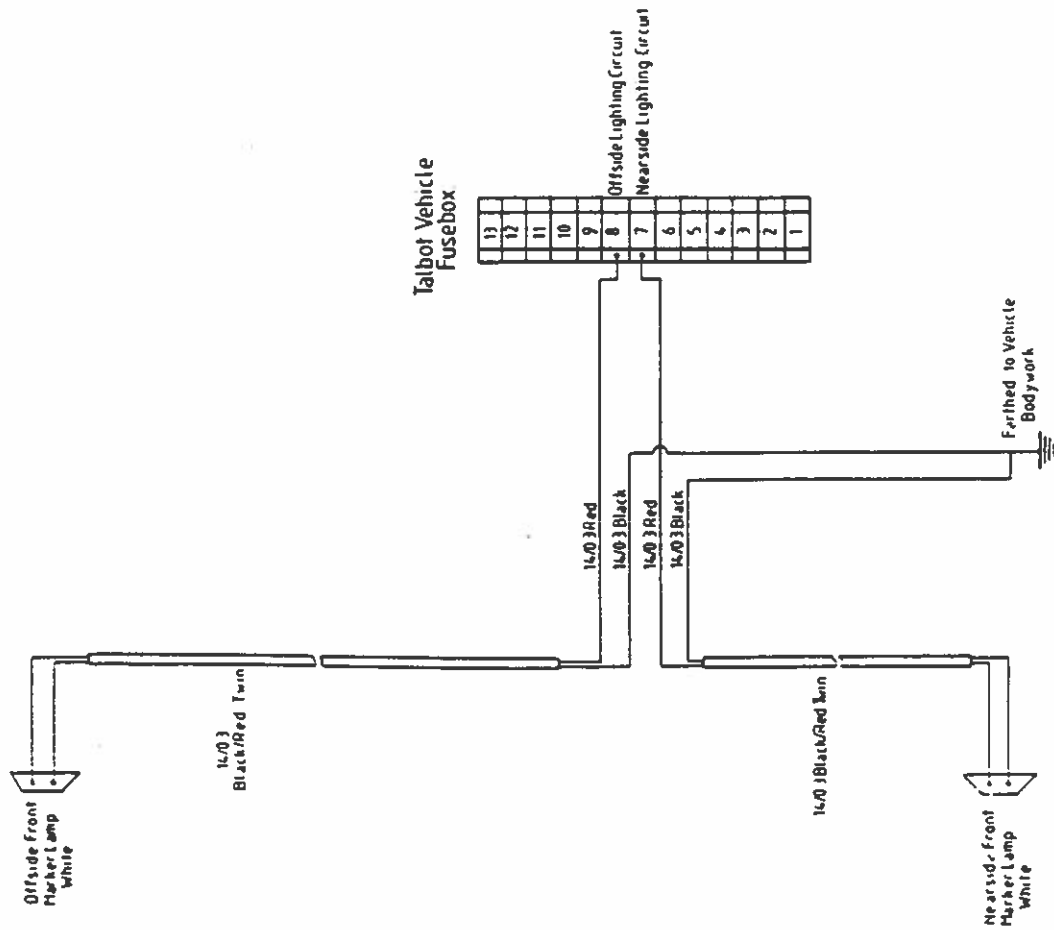


# AUTOSLEEPERS WIRING DIAGRAM

A2SAD11199

## WIRING LAYOUT FOR ZIG CONTROL PANEL 12V





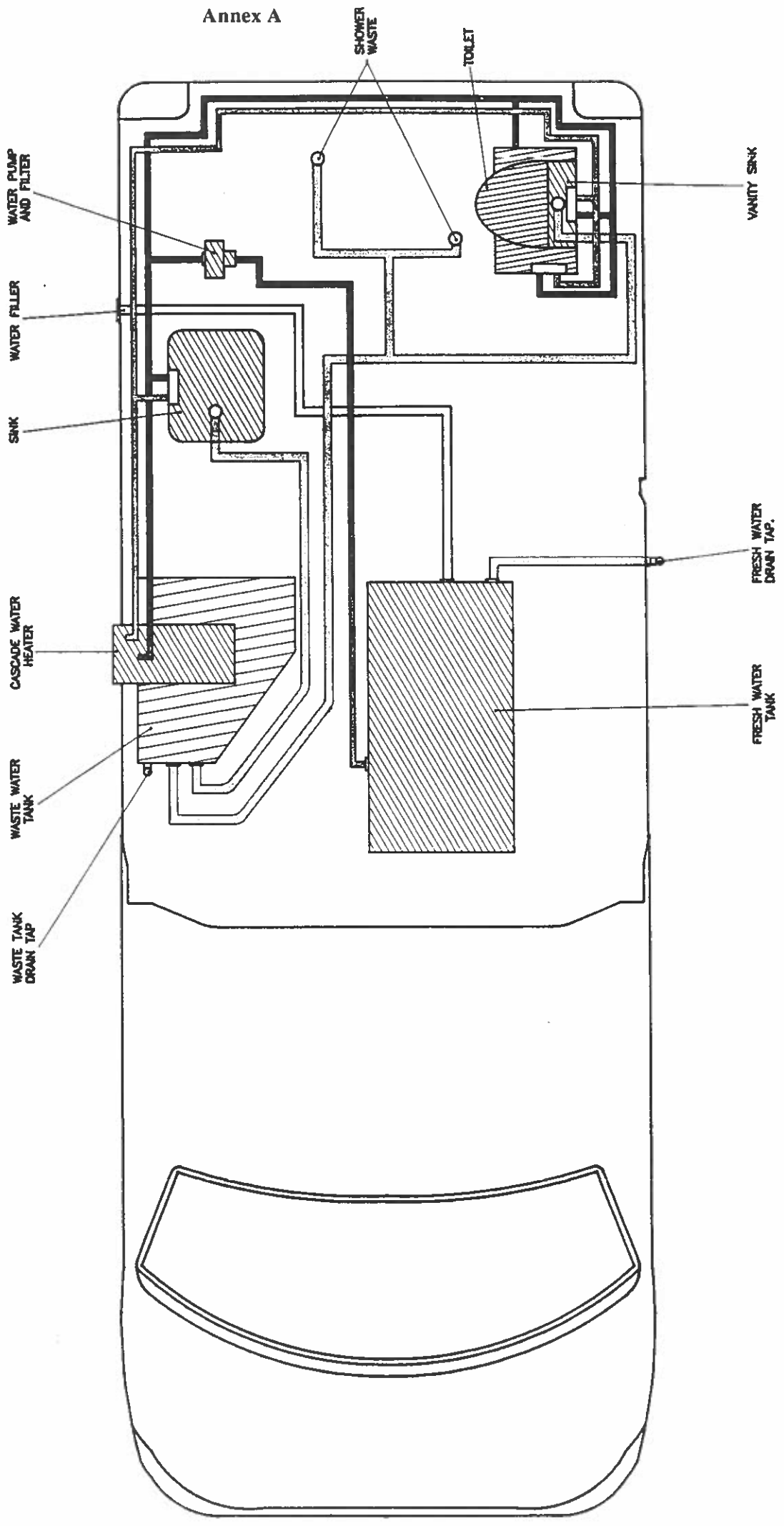
**WIRING LAYOUT FOR ROOF MARKER LAMP**

**AUTOSLEEPERS WIRING DIAGRAM**

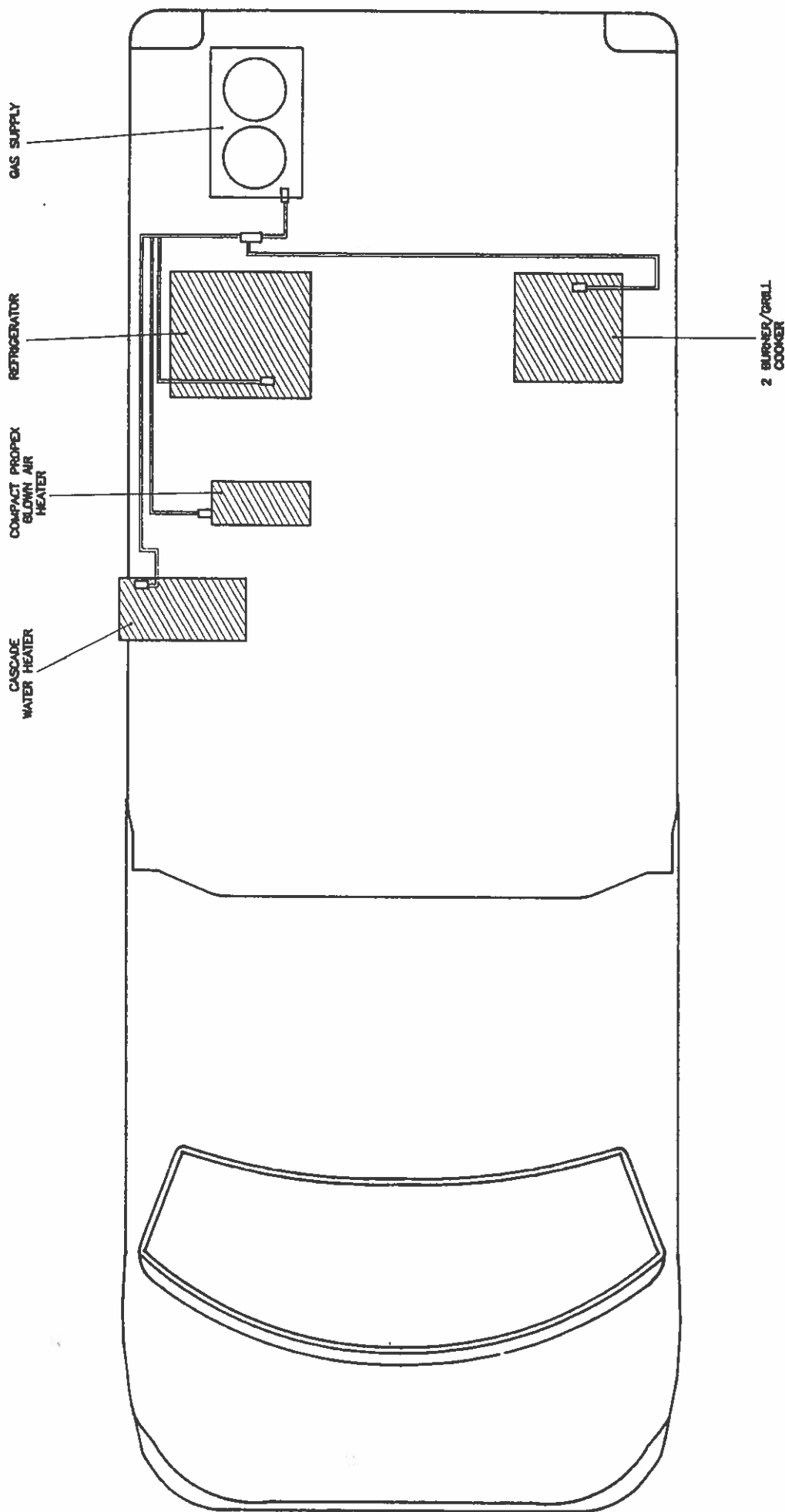
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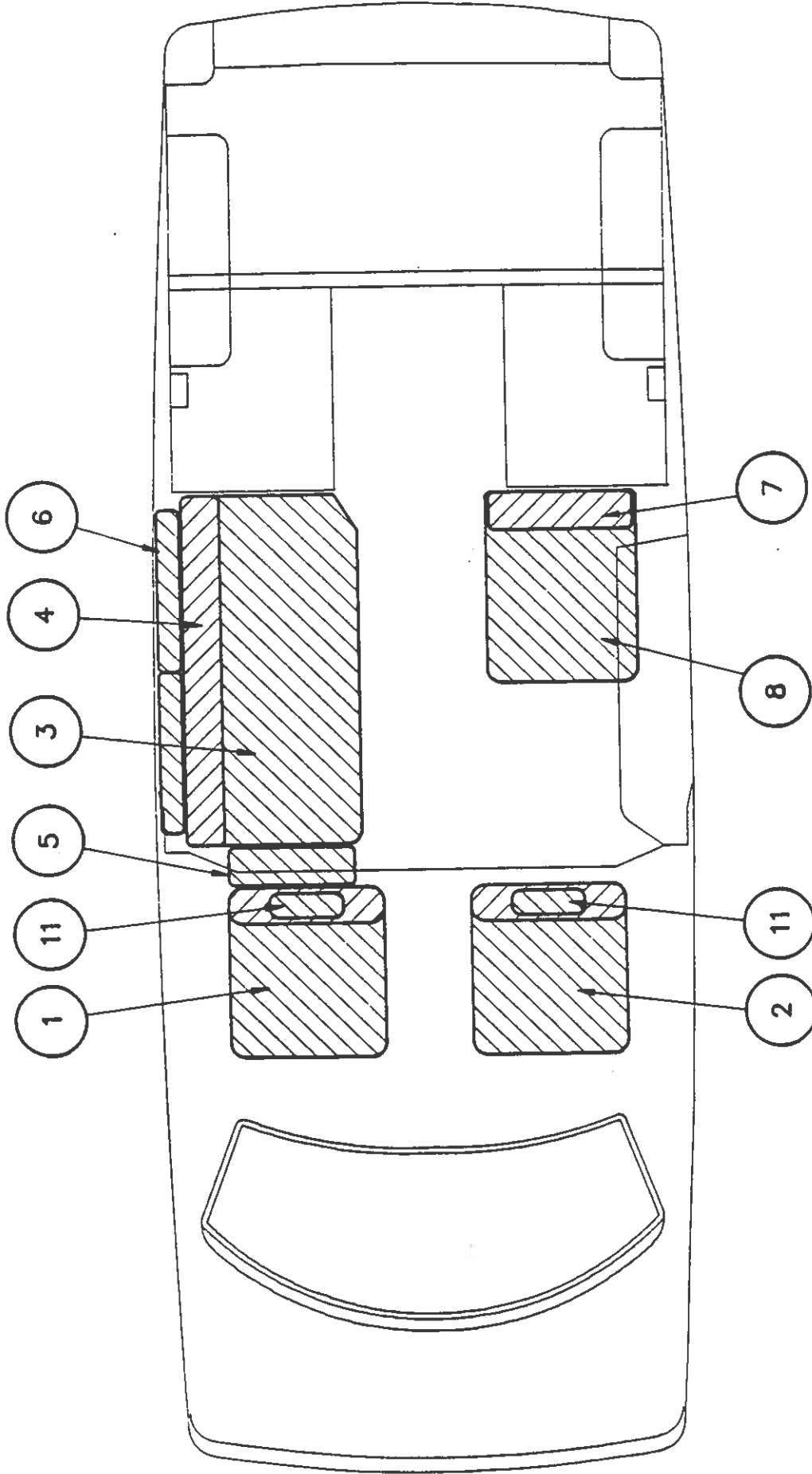
# VWT4 Topaz Water Components and Pipe Route



# VWT4 Topaz Gas Components and Pipe Route



ANNEX C

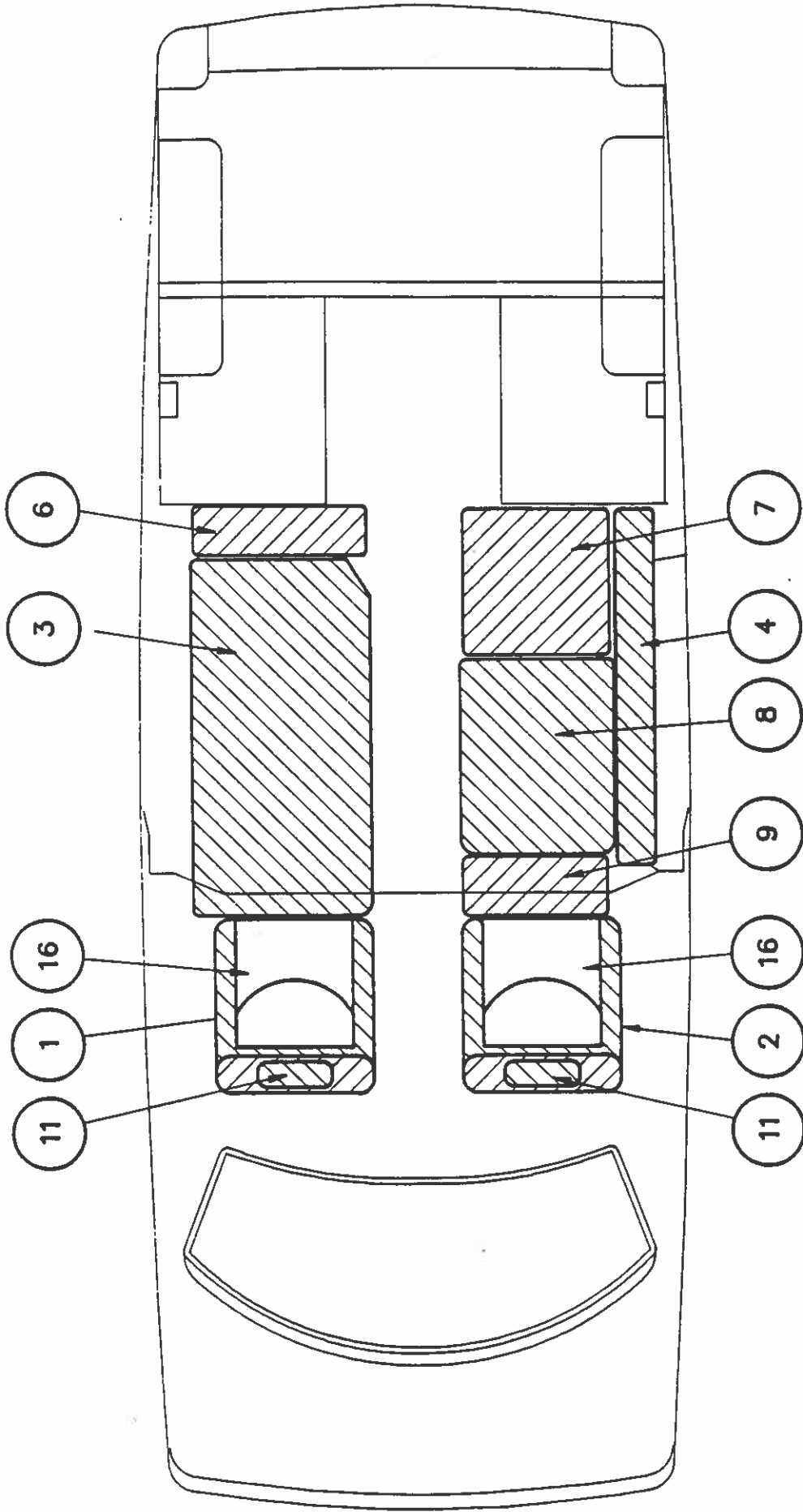


DRG No SAD11294/A

CUSHION ASSEMBLY -- NORMAL

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ANNEX C

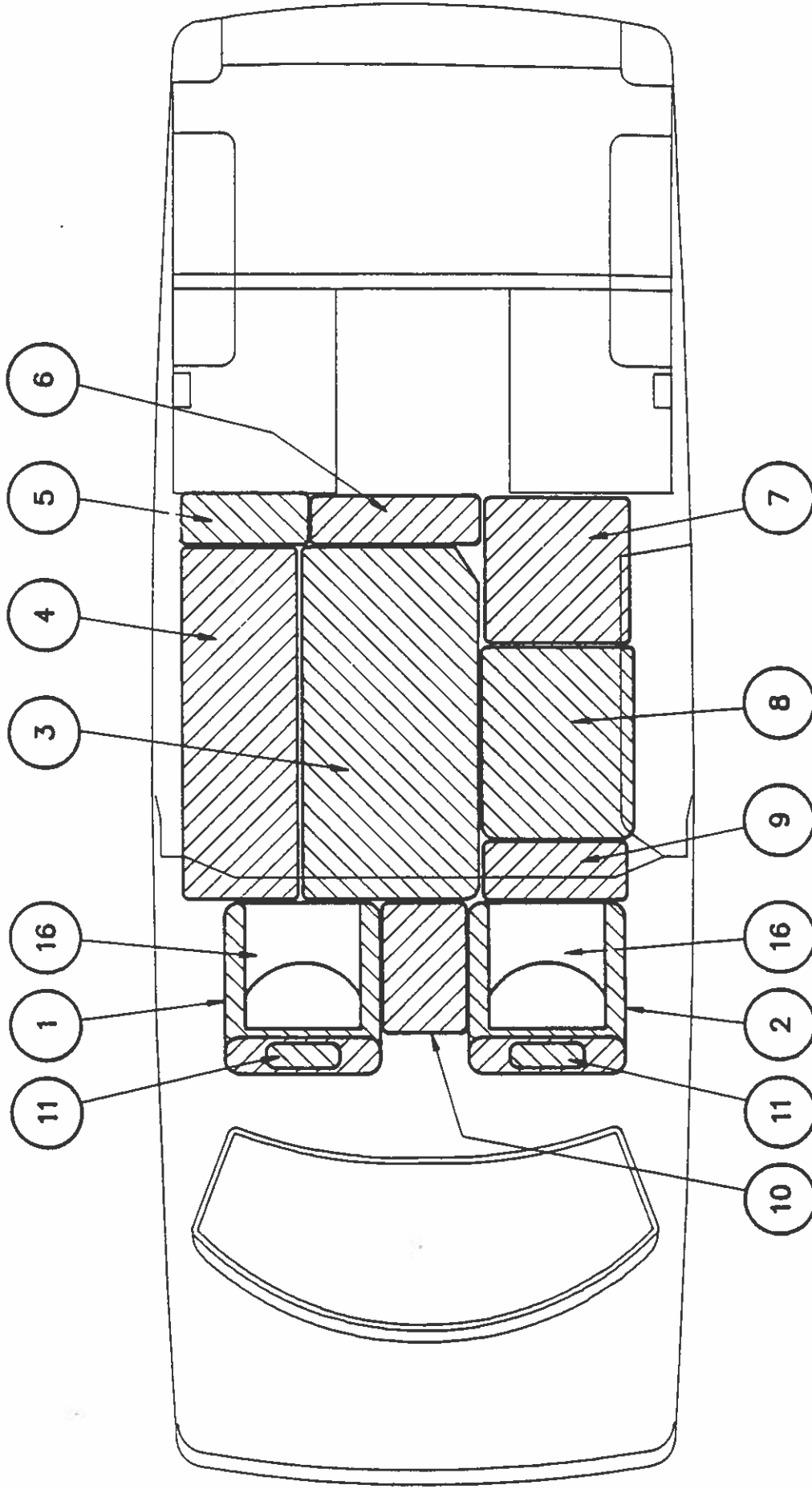


DRG No SA011294/B

SINGLE BED ASSEMBLY

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ANNEX C

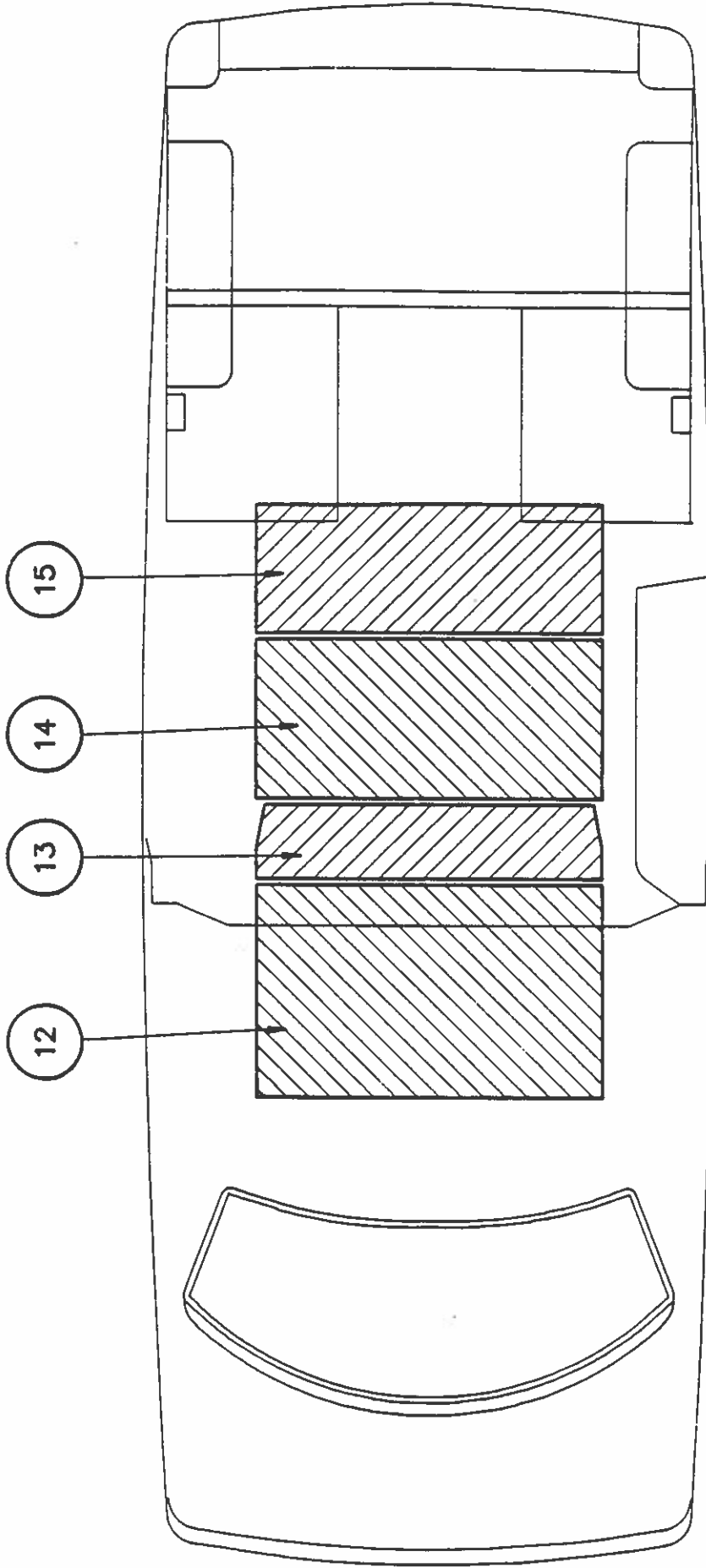


DRG No SAD11294/C

DOUBLE BED ASSEMBLY

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ANNEX C



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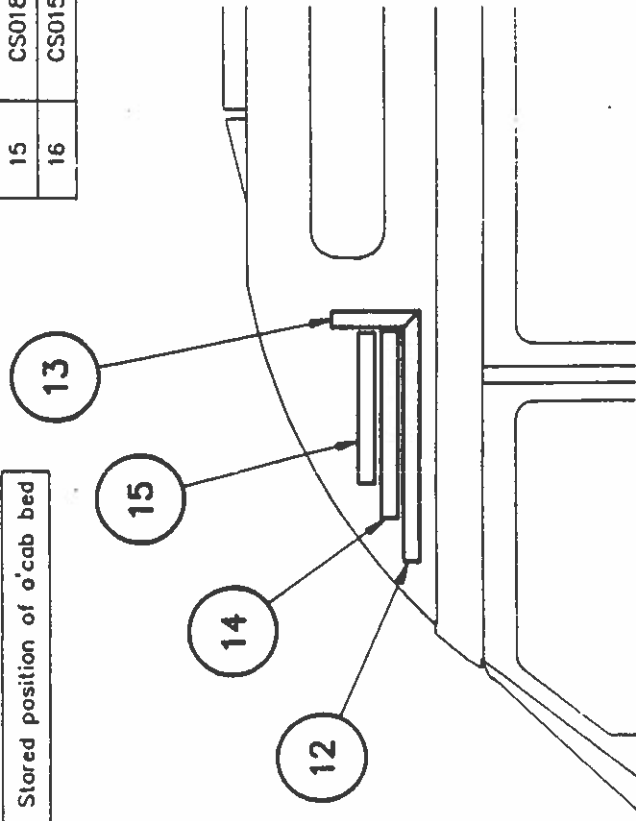
OVERCAB BED ASSEMBLY

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ANNEX C

Item	Part No	Description/Cushion type	Qty	Notes															
1	CS0142	CABSEAT RH	1	-															
2	CS0142	CABSEAT LH	1	-															
3	CS0150	OFFSIDE BENCH CUSHION	1	1200 X 600 X 130															
4	CS0150	OFFSIDE BACKREST CUSHION	1	1200 X 390 X 130															
5	CS0150	INFILL CUSHION	1	430 X 175 X 130															
6	CS0150	INFILL CUSHION	1	1110 X 190 X 75															
7	CS0150	NEARSIDE BACKREST CUSHION	1	495 X 490 X 130															
8	CS0150	NEARSIDE SEAT CUSHION	1	655 X 515 X 130															
9	CS0150	INFILL CUSHION	1	495 X 210 X 130															
10	CS0150	CENTRE INFILL CUSHION - HINGED BACK	1	445 X 285 X 130															
11	CS0162	HEADREST	2	-															
12	CS0185	ROOF MATTRESS	1	1115 X 690 X 45															
13	CS0185	ROOF MATTRESS	1	1115 X 240 X 45	14	CS0185	ROOF MATTRESS	1	1115 X 515 X 45	15	CS0185	ROOF MATTRESS	1	1115 X 415 X 45	16	CS0150	SOFT FLAPPED CUSHION	2	-
14	CS0185	ROOF MATTRESS	1	1115 X 515 X 45	15	CS0185	ROOF MATTRESS	1	1115 X 415 X 45	16	CS0150	SOFT FLAPPED CUSHION	2	-					
15	CS0185	ROOF MATTRESS	1	1115 X 415 X 45	16	CS0150	SOFT FLAPPED CUSHION	2	-										
16	CS0150	SOFT FLAPPED CUSHION	2	-															

Stored position of o'cab bed



- NOTES.  
For normal condition the following apply.
1. Item 5 is stored behind drivers seat.
  2. Item 6 is stored behind offside backrest cushion.
  3. Items 9, 10 and 16 are stored beneath the nearside rear forward facing seat.
- In the event of the vehicle being a four berth model, the ladder should be stored on top of cushion no 15.

DRG No SAD11294/E

PARTS LIST

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JUNE 1994



## LPG Safety in Caravans

### Extract from BS 5482 (Part 2)

#### The safe use of LPG in caravans and non-permanent dwellings.

##### 1) General

Propane and Butane are stored in cylinders as liquids under pressure. When the pressure is released, ie. when the cylinder valve is opened, the liquid boils and gas is evolved. Both gases are heavier than air and any leaking gas will tend to collect at a low level. The gas has a strong and unpleasant smell which enables leaks to be easily detected. The gas is highly flammable and a small quantity of gas in air can form an explosive mixture. Cylinders must be used and stored always in a vertical position with the valve uppermost.

##### 2) Safe Usage

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

- a) Always read and follow the user 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.
- b) **Never check for gas leaks with a naked flame.**
- c) Always turn off the gas cylinder valve(s) or inlet to the vehicle or other dwelling when gas appliances are not in use.
- d) 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 vehicle.
- e) Unless the appliance incorporates automatic ignition, when lighting an appliance always make sure you apply a lighted match or tape to the burner **before** turning on the gas.
- f) If any appliance is disconnected for repair, maintenance, etc. ensure that the gas line is capped off.
- g) 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.
- h) Always seek advice when in doubt.

##### 3) Routine Checking

It is essential to check the installation as follows:

- a) Flexible hoses and tubing should be regularly inspected and replaced when signs of cracking or other deterioration appears. After replacement ensure that the ends are well secured and leak tight.

- b) Check the complete gas installation soundness at least once per annum and as necessary according to usage.
- c) All flue installations should be inspected, at least once a year, throughout their length for integrity of attachment, both the appliance and cowl, and for perforation due to damage or corrosion. Flues should be replaced if any sign of damage or perforation is found. It should be ensured that the replacement is of an approved type conforming to the recommendations of BS 5440 : Part 1. Flexible flue pipes should be manufactured of material not less than 0.10mm thick and should be one of the following grades of stainless steel as specified in BS 1449 : Part 2.

316S11	316S33	320S31
316S13	317S12	320S33
316S31	317S16	

#### 4) Changing Gas Cylinders

The following procedure should be adopted:

- a) Extinguish any fire, flame or source of ignition (including cigarettes, pipes and pilot lights) before changing gas cylinders.
- b) Wherever possible change gas cylinders in the open air.
- c) Ensure that the gas cylinder valve(s) is/are closed before disconnecting any empty cylinder or before removing the plastic caps or plug on the outlet connection of the replacement cylinder. (Note: lefthand thread).
- d) Make firm gas-tight joints. Any leaking vapour will smell. If a leak is suspected after changing gas cylinders and opening valve, test by brushing with soapy water around the joints. Bubbles will form if vapour is leaking. **Never use a naked flame.**
- e) Ensure that the replacement gas cylinder is the correct one for the installation.
- f) Gas cylinder valves are of various designs depending on the type of cylinder and the use for which it is intended and it is essential that the correct pressure regulator with the correct pressure setting and capacity for the installation is used in accordance with the manufacturers instructions.
- g) In the case of a connection on a pressure regulator of gas appliance which relies upon a sealing washer(s) to maintain a gas-tight joint, it is essential to check that the washer is present, is sound and is correctly positioned prior to making the connection. Where the connection relies on a metal to metal seating or bull nose connection to obtain a gas-tight joint it is essential that the mating surfaces are clean and undamaged. In no case should a damaged valve or connection be used.
- h) Where connections are designed to be tightened with a spanner it is essential that a spanner of the correct size is used and that the union is firmly tightened: hand tightness is not sufficient. When self-sealing valves are incorporated in a gas cylinder, connections should be made in accordance with the manufacturers instructions and tools should not be used.

## ANNEX E

### *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 10mph. (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 Appliances*

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 etcetera) and leave them clean and tidy. Young children should be escorted.

##### *Waste Disposal*

If the vehicle is not fitted with a waster water tank, a suitable receptacle should be placed below all waste water outlet pipes. Do not let these containers overflow.

Dispose of all waste water where instructed.

Empty of all waste water where instructed.

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 caravans.

Musical instruments, record players, radios and televisions should not be used to the inconvenience of other people on site.

Open and close doors quietly.

Power generators must be adequately silenced and used with consideration.

*Dogs and Pets*

All dogs and other pets should be kept under control.

Unless permission has been granted no animal should be allowed loose on the site and leads must not exceed 10ft.

No animal should be allowed in the shower/toilet blocks.

Do not let dogs foul the site.

*Fire Precautions*

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

Although not compulsory it is recommended that a 1 x 1kg 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 of 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 & 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 land owner 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 account should:

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

*Parking*

Motor caravans should only be parked in approved places.

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

*Driving*

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

In the event of a motor caravan travelling slowly and there being a queue of traffic behind, the driver of the motor caravan 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 should 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 such use is permitted by the manufacturer of the appliance.

*Handbook*

Before using a motor caravan 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.

1. Guard against all risk of fires. Hay and heathland catch alight easily and once ablaze are very hard to put out. **REMEMBER: FIRE SPREADS QUICKLY.**
2. Keep to public paths across farmland.
3. Use gates and stiles to cross fences, hedges and walls.
4. Leave livestock, crops and machinery alone. View from a distance.
5. Take your litter home - it is unsightly and harmful to wildlife.
6. Help to keep all water clean.
7. Take special care of country roads.
8. 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 molluscs 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 regulation when taking them..

Do **not** pull up seaweeds 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.

## VENTILATION

- 1) General  
Fixed ventilation is a statutory requirements in all motor caravans that are fitted with gas burning appliances. These ventilation apertures are positioned both high and low level and for your safety these should not be obstructed.
  
- 2) 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. The vehicles fresh air ventilation in the dashboard should be open when the vehicle is being used in the caravan mode.
  
- 3) High Level Ventilation  
High level ventilation is afforded through the roof lights. The ventilation area relates to the rating of the appliances in the vehicle. Roof lights must not be covered with any objects that may limit or affect the ventilation requirements.
  
- 4) 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 and rectified accordingly.

**USEFUL DATA RECORD**

1) We suggest that you record key detail in the spaces below should you accidentally mislay you keys or other vital documentation.

2) Vehicle Type .....

Vehicle Model .....

Auto-Sleepers Production Number .....

**Keys**

Ignition Key .....

Door Key (if applicable) .....

Fuel Filler (if applicable) .....

Water Filler .....

Alarm Code (if fitted) .....

AA/RAC Membership Number .....

Radio Security Code .....

3) Supplying Dealer Contact Number .....



## RECOMMENDED ANNUAL CHECK FOR MOTOR CARAVAN BODIES AND CONVERSIONS

### Introduction

This annex offers guidelines for the checking of a motor caravan's habitation.

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:

- 1) Any owner's manual or equivalent supplied with the vehicle by the motor caravan convertor.
- 2) Appliance manufacturer's leaflets.
- 3) Driver's handbook or equivalent supplied by the chassis manufacturer.

A vehicle is accepted for survey at the dealer's discretion.

Any defects, repairs, adjustments, cleaning or lubrication required will be noted on the check list. 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 motor caravan.

This guide is published as an aide memoir for owners and 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. The SMMT and its member companies are not part of this contract, and accept no liability in contract, tort or otherwise, other than death or personal injury due to negligence on their part.

### **Section 1**      **Body Mounting**

#### 1.1            **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 be present and tight.

#### 1.2            **Body to Cab**

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

#### 1.3            **Body Retention (demountables)**

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**

#### **2.1**

#### **Windows**

Check window glazing rubber or sealing for cracks and general condition. Check for satisfactory opening and closing, 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**

#### **3.1**

#### **EXTERNAL DOORS**

Not including base vehicle doors.

#### **3.1.1**

#### **Security**

Check that hinges and catches are satisfactory and that, when latched, doors are held securely shut.

#### **3.1.2**

#### **Sealing**

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

#### **3.2**

#### **INTERNAL DOORS**

#### **3.2.1**

#### **Security**

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

#### **3.2.2**

#### **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**

#### **4.1**

#### **Corner Steadies**

Check that attachments to chassis are secure. Ensure steadies work freely and satisfactorily. Lubricate screw.

#### **4.2**

#### **Folding Step**

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

#### **4.3**

#### **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).

#### **4.4**

#### **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.

#### **4.5**

#### **Wheelboxes**

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

**Section 5**     **Attachments to Body Exterior**

5.1     **Roof Lights**

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

5.2     **Roof Racks and Ladders**

Check security to body and general condition. Check roof for damage adjacent to rack.

5.3     **Mouldings, Trims**

Check security. Check sealing has not deteriorated (see section 6.1).

5.4     **Flue Terminals, Air Vents**

Check security. Check sealing has not deteriorated. Check that these are not blocked.

**Section 6**     **Internal**

6.1     **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.

6.2     **Furniture**

Check furniture is securely fixed. Check door hinges, catches and stays for satisfactory operation.

6.3     **Dinette Seat/Bed**

Check seat bases for security of fixings and for damage. Make up beds according to manufacturer's instructions and check for rigidity and safety.

6.4     **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.

6.5     **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, seat swivels and seat back operation.

6.6     **Fire Extinguisher**

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

6.7     **Fire Blanket**

Check position (should be near cooker). If one is not present, inform the customer of the advisability of such equipment.

6.8     **Warning Notice**

Check condition.

6.9     **Portable or Open Flame Heating Equipment**

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

## Section 7

### Elevating Roofs

7.1

#### 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.

7.2

#### Canvas Side Walls

Check for satisfactory attachment to body and roof. Check for splits or holes, particularly at fold lines. Check that the canvas stowed satisfactorily when roof is lowered. (A waterproofing check will be done at the prior request of the customer).

7.3

#### 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.

7.4

#### 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

8.1

#### Cylinders and Regulators

Establish that the cylinders and regulators are compatible. Butane (blue) cylinders should have a regulator stamped with the pressure 11" WG (28 m bar) and propane (red) cylinders should be stamped 14" WG (27 m bar). Check that the regulator is controlling the gas to the correct pressure for the type of cylinder fitted. Check cylinder compartment vents and gas drain hole in floor are free from obstruction. Check seals on internal doors.

8.2

#### Hose and Piping

Check any flexible hose for condition and cracking, and that the date stamped on it has not passed. Advise customer if the hose is out of date or the date of expiry is near. Check piping for condition, damage and correct support. Carry out an overall leak test.

8.3

#### Appliances

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

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

8.3.1

##### 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.

8.3.2

##### 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.

### 8.3.3

#### 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.

### 8.3.4

#### 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.

### 8.3.5

#### 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.

### 8.3.6

#### 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.

## Section 9

### Water System

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

### 9.1

#### Fresh Water Tank/Container

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.

### 9.2

#### 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).

- 9.3            Filter Pump  
When applicable, remove filter, clean 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.
- 9.4            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).
- 9.5            Waste Water System  
With water running through the drain pipes, check for leaks and satisfactory draining of water from sinks etc.
- 9.6            Couplings and Fluids  
Check that the appropriate markings are used - blue for fresh water, red for waste water.  
Check that filler positions are designated "petrol", "diesel" or "water" as appropriate.
- Section 10**    Electrical Systems  
10.1            EXTRA LOW VOLTAGE 12 VOLTS (Excluding Vehicle)
- 10.1.1        Battery/ies  
Check battery/ies for condition. Check connections, wires, fuses and relays appertaining to the habitation electrics.
- 10.1.2        Wiring  
Examine all visible wiring. Check all connections and joints are sound and satisfactory.
- 10.1.3        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.
- 10.1.4        Appliances  
Inspect all appliances for damage, signs of overheating and secure fixing.  
Function test all appliances.
- 10.2            Mains 240 Volt System  
The inspection and certification of the 240 volt system should be carried out by a qualified electrician who is an approved contractor of the NICEIC.

DEALER STAMP  DATE:        /    /19	DEALER STAMP  DATE:        /    /19
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# MOTOR CARAVAN ANNUAL CHECK

Check Sheet

Customer's Copy

Vehicle Reg. Mark _____	A Class
Make & Model _____	Coachbuilt
Year of Manufacture _____	High Top Conversion
Recorded Mileage _____	Demountable
	Elevating Roof

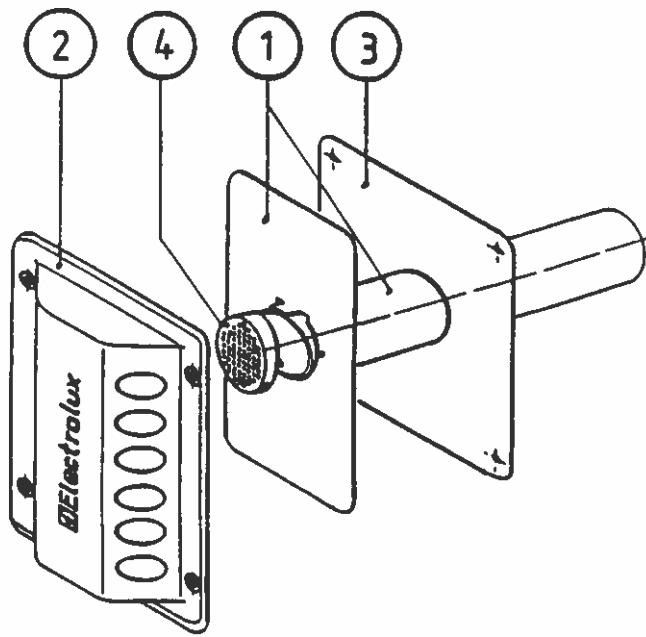
Check Item	Manual	O.K.	Remarks - Advice to Customers
<b>Section 1: Body Mounting</b>	-	-	
Body to Chassis	1.1		
Body to Cab	1.2		
Body Retention	1.3		
<b>Section 2: Windows</b>	-	-	
Windows	2.1		
<b>Section 3: Doors</b>	-	-	
External	3.1		
Internal	3.2		
<b>Section 4: Att to Chassis</b>	-	-	
Corner Steadies	4.1		
Folding Step	4.2		
Water Tank Mounts	4.3		
Spare Wheel	4.4		
Wheel Boxes	4.5		
<b>Section 5: Body Exterior</b>	-	-	
Roof Lights	5.1		
Roof Rack & Ladder	5.2		
Mouldings & Trim	5.3		
Flue Terminals, Air Vents	5.4		
<b>Section 6: Internal</b>	-	-	
Seepage Check	6.1		
Furniture	6.2		
Dinette Seat/Beds	6.3		
Curtains, Blinds, Nets	6.4		
Cab Seats	6.5		
Fire Extinguisher	6.6		
Fire Blanket	6.7		
Warning Notice	6.8		
Heating Equipment	6.9		
<b>Section 7: Lift Up Doors</b>	-	-	
Lifting Mechanism	7.1		
Canvas Side Walls	7.2		
Solid Side Walls	7.3		
Locking	7.4		
<b>Section 8: Gas System</b>	-	-	
Cylinders & Regulator	8.1		
Hose & Piping	8.2		
Appliances	8.3		



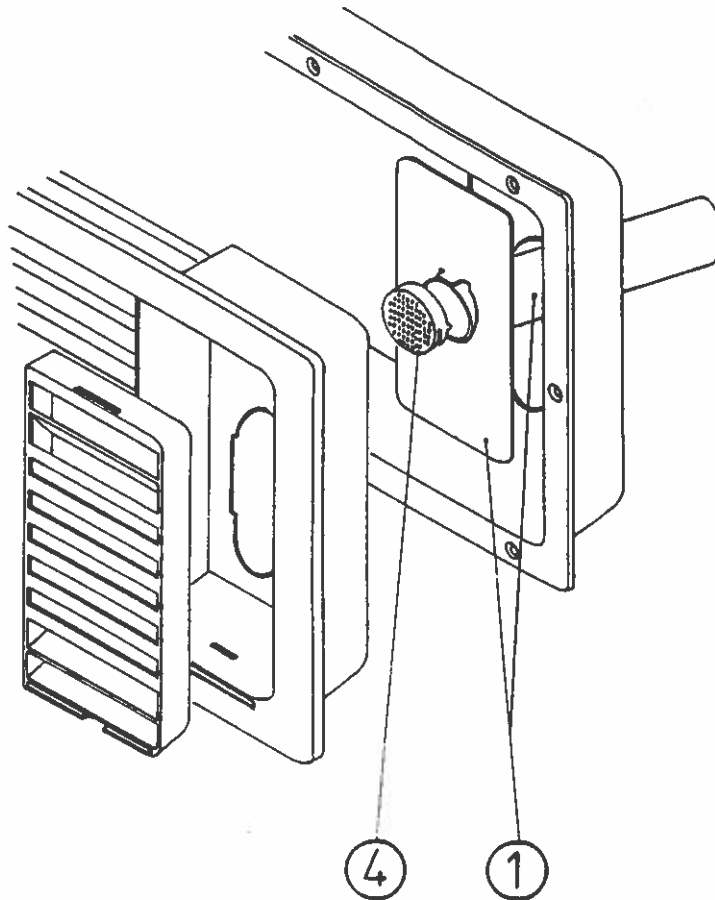
<b>Section 9: Water System</b>	-	-	
Fresh Water Tank	9.1		
Waste Water Tank	9.2		
Filter Pump	9.3		
System Check	9.4		
Waste Water System	9.5		
Couplings and Fluids	9.6		
<b>Section 10: Electrics</b>	-	-	
12 Volt System	10.1		
Batteries	10.1.1		
Wiring	10.1.2		
Fuses, Fuse Holders	10.1.3		
Appliances	10.1.4		
Mains 240 Volt System	10.2		

Dealer _____	
_____	Signed _____
_____	Date _____

A



B

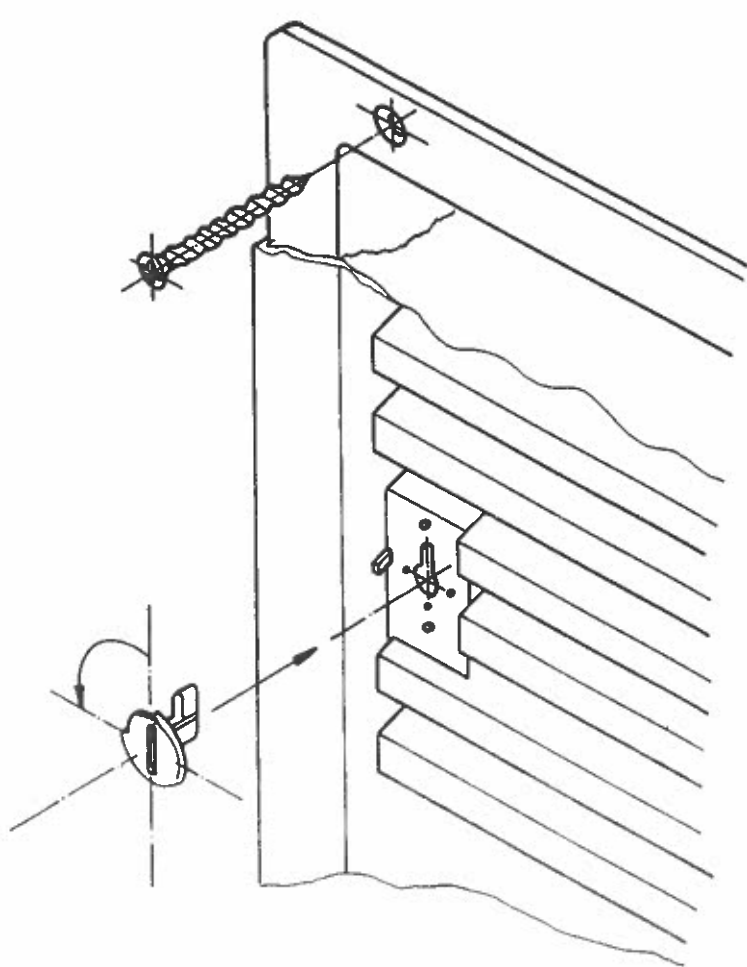
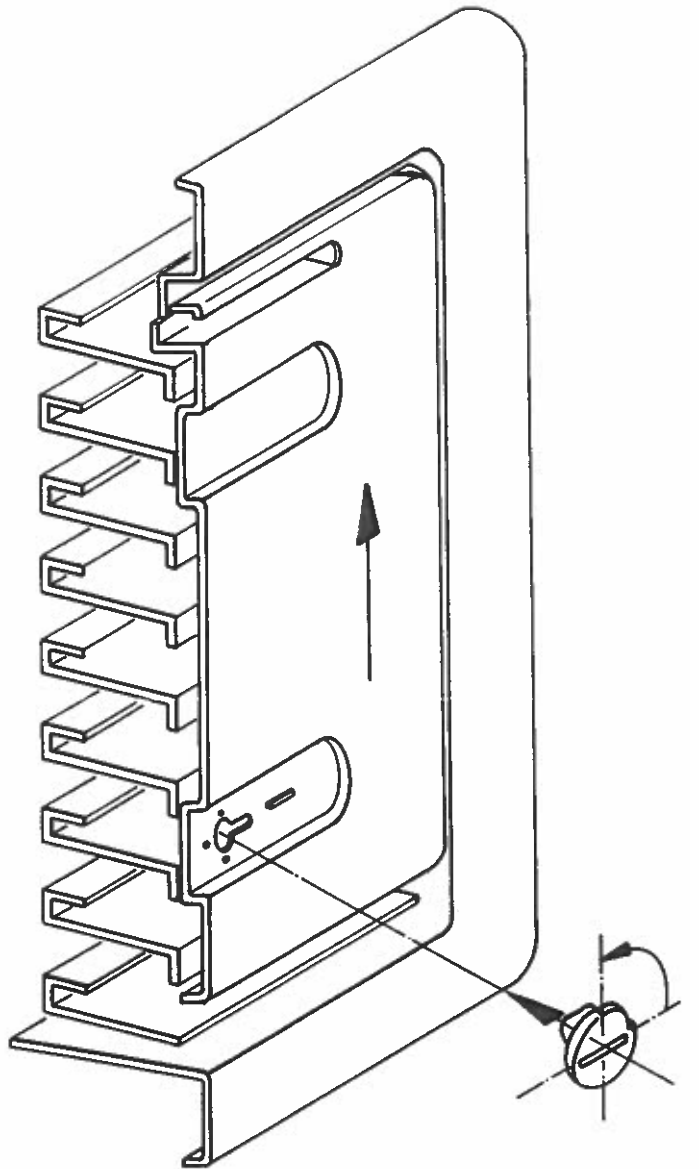


#### Montageanweisung Abgasführung

Ihrem Kühlgerät beige packt sind die Teile 1, 2, 3, 4 wie in Abb. A dargestellt.

Bei separater Abgasführung montieren Sie diese Teile wie in Abb. A dargestellt.

Sollten Sie unser Belüftungssystem einsetzen, benötigen Sie von dem Beipack nur die Teile 1 + 4. Montieren Sie bitte wie in Abb. B dargestellt.



NEUE TÜRVERRIEGELUNG

