



AUTO- SLEEPER

VOLKSWAGEN T4

TROOPER

OWNERS ' MANUAL

SEPTEMBER 1991

VIM 005

SECTION

PAGE NUMBERS

LIST OF CONTENTS

	FROM	TO
INTRODUCTION	1.1	1.1
SPECIFICATION	2.1	2.2
MATERIALS	3.1	3.1
INTERNAL LAYOUT	4.1	4.4
OPERATING INSTRUCTIONS	5.1	5.11
MAINTENANCE	6.1	6.1
SAFETY PRECAUTIONS - GAS APPLIANCES AND FITTINGS	7.1	7.2
SAFETY PRECAUTIONS - ELECTRICAL SYSTEMS	8.1	8.1
SAFETY PRECAUTIONS - FIRE	9.1	9.1
ELECTRICAL FAULT DIAGNOSIS	10.1	10.2
ELECTRICAL WIRING DIAGRAM	11.1	11.1
GAS SYSTEM	Annex A	
WATER SYSTEM	Annex B	

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 GIVE YOU 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 WILL FIND INSIDE THE FASCIA 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.

YOUR VOLKSWAGEN TROOPER CONFORMS TO THE SMMT MOTOR CARAVAN CONSTRUCTION CODE.

Auto-Sleepers Limited
Orchard Works
Willersey
Broadway
Worcestershire
WR12 7PT

**Telephone: 0386 853338 Fax Number:
0386 858343**

SPECIFICATION

1. VEHICLE TYPE

Auto-Sleeper Trooper based on the Volkswagen new Transporter T4 1000 Kg van.

2. EXTERIOR DIMENSIONS

Overall Length:	15' 3 ¼"
Overall Width (including mirrors)	7' 1 ¼"
Overall Width (mirrors folded)	6' 3"
Overall Height:	6' 10 ½"

3. INTERNAL DIMENSIONS

Internal Height (Roof up)	6' 6"
Internal Height Roof Down to underside of upper bed	4' 7"

4. WEIGHT

	<u>4 Cylinder</u> Petrol	<u>4 Cylinder</u> Diesel	<u>5 Cylinder</u> Diesel
Gross Vehicle Weight	2515 kg	2515 kg	2590 kg
Unladen Weight	1860 kg	1860 kg	1935 kg
Load Capacity	655 kg	655 kg	655 kg

Unladen Weight. The weight of the vehicle with body fitted with all electrical equipment and auxiliary equipment necessary for normal operation of the vehicle plus the weight of the following elements:

- a) Coolants (oils and water)
- b) At least 90% of fuel tank capacity
- c) Spare wheel
- d) Tool kit.

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

- a. Water Tank. A 77.7 litre (17 gallon) fresh water tank is fitted. A triple diaphragm water pump provides running water to the sink. The water system is externally filled 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. An optional 29.7 litre (6Y gallon) waste water tank is available.

7. GAS SYSTEM

- a. General. Either a 4.7 kg Butane or a 3.9 kg Propane gas cylinder plus one Camping Gaz 907 cylinder may be carried in the vented gas locker at the base of the wardrobe. Access to this locker, which is sealed against the ingress of vapour into the interior of the vehicle, is from the rear of the vehicle. Metric steel and copper pipe with brass fittings is used for all gas appliances each of which has its own gas isolator tap. Appliances are designed for use with Butane at 28mb (11.2-) water gauge, or with, Propane at 37 mb (14.8") water gauge.

8. ELECTRICAL SYSTEM

a. General. The 12 volt DC electrical system is fed through the vehicle battery; a second 12 volt 60 Amp/hour battery may be fitted as an optional extra. A 240 volt mains hook-up is fitted for the **refrigerator (mains operation), and water heater (mains operation if fitted)** and the 240 volt plug socket.

b. Interior Lighting. Interior lighting consists of:

1. Two 16 watt twin tube fluorescent lights.
2. One 13 watt single tube fluorescent light.
3. Two courtesy lights.

9. BED SIZES

a. Bed sizes are as follows:

- | | |
|---------------|-------------|
| 1. Double bed | 6' 3" Long |
| | 3' 8" Wide |
| 2. Roof Bunk | 5' 0" Long |
| | 3' 10" Wide |

10. CLIMATIC CONDITIONS

The Trooper has been designed for used in temperate climates.

11. OPTIONS

Waste Water

Tank.Second Battery

Thermostatically Controlled Blown Air Heating System. (Available on Production vehicles only).

Battery Charger (available only if a Second Battery is fitted). Carver Cascade 2GE water heater with mains hook-up facility. (Available on production vehicles only).

12. HISTORICAL

The T4 Trooper was introduced in September 1991 as successor to the T2 Trident.

MATERIALS

1. The following materials have been used in the manufacture of your Auto-Sleeper. 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	Option1	Option2
Cushions	Anthony Brown	Anthony 15MF Mele Rose
Curtains	Blue lined Chartres	Rust Lined Chartres
Carpets	Dalmation Blue Mist	Dalmation II Red Crimea
Lining Material	Crockcroft Blue Mist	Crockcroft Beige
Units	Light Euopean Oak	Light Euopean Oak
Unit work surfaces	Light Euopean Oak	Light Euopean Oak

3. Exterior Colours

Base Vehicle	Volswagon Grey White White Code R902	Volswagon Grey Code R902
Coach Line	Honda new dark grey Metallic Code NH91M3	Honda new dark grey Metallic Code NH91M3
Adhesive Coach Stripe	¼"Gold Line tape ¼"White/Red Line tape ¼"Blue Line Tape	¼" Red line tape ¼"White/Red line tape ¼"Grey line tape

4. Exterior Trim

Wheel Trims	Volkswagon Manufacture	Volkswagon Manufacture
-------------	------------------------	------------------------

NOTE: 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, quoting the Auto-Sleeper production number that you will find in the glove compartment of your vehicle.

INTERNAL LAYOUT

1) GENERAL

The versatile design of the Trooper allows a roomy living area together with all the amenities found in a luxurious motor caravan. A large amount of floor space permits use as both a load carrier and passenger vehicle with easy access through the sliding side door

2) SEATING ARRANGEMENTS

In addition to the contoured cab seats, further seating for two is available at the rear of the vehicle. The passenger cab seat is fitted with a swivel mechanism. Both the cab seats can be adjusted to provide a comfortable driving position by releasing the catches to the side of the seat which control the fore and aft movement and backrest rake. Both cab seats are fitted with trimmed headrests as standard.

IMPORTANT: WHEN THE VEHICLE IS IN MOTION WITH CHILDREN ON BOARD, THE CHILD PROOF SAFETY LOCK ON THE SLIDING DOOR SHOULD BE APPLIED. ENSURE THAT THE CHILDPROOF LOCK IS NOT ACTIVATED WHEN THE MOTOR CARAVAN IS PARKED OFF THE ROAD.

IMPORTANT: SEAT RESTRAINT STRAPS ARE FITTED AS STANDARD EQUIPMENT TO ALL FRONT FACING SEATS. PASSENGERS ARE ADVISED THAT IT IS A LEGAL REQUIREMENT TO WEAR THESE RESTRAINT STRAPS WHILST THE VEHICLE IS IN MOTION.

Child seats suitable for use with lap seat restraints may be obtained from:

John Lyus

Telephone: 0908 220909

In-Car Safety Centre Unit 5
37 Erica Road The Auto-entre
Stacey Bushes

Milton Keynes, MK12 6HS

3) SWIVEL MECHANISM

In order to swivel the passenger seat lift the release lever on the side of the seat. The seat may then be swivelled.

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

4) TABLES

Two tables are supplied as standard. A large table is stored, when not in use, behind the driver's seat. A smaller dinette table is stored in the upper section of the bed box drawer. When the large dinette table is required, the leg should first be placed in the floor mounting and the table placed upon it. When not in use the table bung should be placed in the floor mounting hole. When the additional dinette table is required, this should be placed on the offset table leg and the assembly swivelled to the required position. The leg of this table is stored in the base of the drawer under the rear seat.

IMPORTANT: THE MAIN DINETTE TABLE AND TABLE LEG AND ADDITIONAL DINETTE TABLE MUST BE STORED WHEN THE VEHICLE IS IN MOTION.

5) KITCHEN AREA

The kitchen area is found on the offside of the vehicle and consists of a two burner cooker with grill below, a stainless steel sink/drainer and a refrigerator. The cooker/grill and the sink, when not in use, are concealed by hinged laminated heat resistant lids which offer further working space if required. Beneath the cooker/grill is the 2 cubic foot (gross) Electrolux RM212F gas/12 volt/240 volt refrigerator which is fitted with electronic ignition, flame failure device and freezer compartment. Below the sink is a small hinged flap which gives access to the cutlery drawer as well as to a useful area for stores and utensils. To the right of the refrigerator is a further storage compartment with two drawers beneath. Immediately to the right of the refrigerator at floor level is housed the chemical toilet in its own storage compartment. To the right of this compartment is a further one housing the Carver Cascade (when fitted) gas tap assembly and RCCD. In the event of a thermostatically controlled blown air heating system being fitted the heater vents are found at floor level immediately in front of the storage drawer. Between the sink and wardrobe is a further large storage area which incorporates two removable wire baskets suitable for additional kitchen or clothing items. The crockery for four, supplied as standard, is found in the base of this compartment.

6) WARDROBE UNIT

The wardrobe unit is situated at the nearside rear of the vehicle. Access is through both the hinged wardrobe door positioned in the top of the unit as well as through the additional door which is accessible from the rear of the vehicle when the tailgate is open. The wardrobe incorporates a hanging rail. The dimensions are: Height 2' 10", Depth 1' 4" and Width 1' 11".

7) UPSTAIRS DOUBLE BED

There is facility in the raising roof section for a double bed. This consists of three mattresses that are stored in the roof area when the roof is locked down. To assemble the upstairs double bed raise the elevating roof fully, engage the side panels in their vertical locked position, placing the mattresses as follows:

- a. Thin (small) mattress at rear of roof area.
- b. Intermediate mattress board forward of thin (small) mattress.
- c. Forward mattress board - identified by pull handle - in fully forward position against trimmed location blocks.

To dismantle the bed, the above action should be reversed noting that the thin (small) roof mattress must be placed to the rear of the roof area.

Once the roof has been locked in the down position ensure that the roof mattresses are pushed firmly to the rear of the vehicle.

NOTE: THE UPSTAIRS DOUBLE BED IS SUITABLE ONLY FOR CHILDREN. THE WEIGHT LIMITATION OF 80 KG IS NOT TO BE EXCEEDED.

8) STORAGE

In addition to the areas already described, further storage space is available in the bed box drawer. Also items may be stored on or below the rear parcel shelf as well as in the small storage compartment situated at the nearside end of the rear seat.

IMPORTANT: HEAVY ITEMS MUST NOT BE STORED IN ANY STORAGE AREA FROM WHICH IT COULD COME FREE AND CAUSE INJURY TO THE OCCUPANTS OF THE VEHICLE. ENSURE ALL CUPBOARDS ARE SECURELY FASTENED BEFORE MOVING OFF. ENSURE ALSO THAT THE BED BOX DRAWER LOCKS ARE ENGAGED BEFORE MOVING OFF.

9) SLEEPING ARRANGEMENTS

The Trooper offers two sleeping arrangements as standard, either the lower double bed or the upstairs double bed.

Lower Double Bed. The lower double bed may be made up as follows:

- a) Release locking mechanism and withdraw seat base to fully extended position. The cushions will automatically assume their correct positions.
- b) For converting the bed back to the dinette position the above sequence should be reversed.

Upper Double Bed. See paragraph 7.

10) WINDOWS AND VENTILATION

Windows. All lower caravan windows are factory fitted Volkswagen units and are manufactured in toughened glass. Two sliding windows are fitted, one on the nearside side sliding door the other on the offside immediately behind the drivers seat. To open the windows: a) Press down locking button on window catch. b) Slide window to the required position. It should be noted that the side sliding windows have intermediate stop positions that allows them to be opened to a small degree to give ventilation whilst at the same time maintaining the security of the vehicle.

IMPORTANT: See page 9.1 SAFETY PRECAUTIONS GAS - item 6.

Ventilation.

In addition to the ventilation provided by the sliding caravan windows and the cab windows, additional ventilation is available by hinging the side panels inwards to either the first retention position or, if required, lowering fully to give maximum ventilation.

IMPORTANT: ONLY ONE SIDE PANEL SHOULD BE FOLDED TO THE FULLY HORIZONTAL POSITION FOR SAFETY REASONS. WHEN SIDE PANELS ARE HINGED IN TO THE FIRST RETENTION POSITION, THEY SHOULD BE SECURELY FASTENED AT BOTH ENDS.

Flyscreens/Privacy Blinds

Flyscreens/privacy blinds are fitted to the lower caravan windows. These roller type flyscreens/blinds are operated by first pushing together the spring loaded locking buttons on the blind body and then lifting to the fully extended position. This will result in the blind being in the fully locked position thus allowing full ventilation in hot weather whilst at the same time preventing the ingress of insects into the interior of the vehicle.

IMPORTANT

DO NOT OBSTRUCT THE VENTILATORS WHICH ARE FITTED - YOUR SAFETY DEPENDS UPON THEM.

11) INSULATION

All body panels except the front doors are insulated using either fibreglass wool or coremat insulation material. The elevating roof is also insulated giving protection against extremes of heat and cold whilst at the same time minimizing condensation.

OPERATING INSTRUCTIONS

- 1) GENERAL. All appliances fitted to the Trooper have been thoroughly tested 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 appropriate accompanying manufacturer's literature. All warranty certificates should be completed and returned to the relevant manufacturer.
- 2) GAS SYSTEM. The ventilated gas locker is situated in the base of the wardrobe; access is from the rear of the vehicle with the tailgate open. The gas cylinders and regulators are not supplied with the vehicle; the system will operate on both Propane and Butane.

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

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

IMPORTANT: THE GAS BOTTLE, WHEN FITTED, MUST BE SECURED BY USE OF THE RESTRAINING STRAP.

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

Isolating Taps. Gas isolating taps are to be found in the cupboard adjacent to the chemical toilet storage compartment. The position of taps is as follows:

<u>Standard Vehicle</u>	<u>Vehicle fitted with Blown Air Heating System/Cascade Water Heater</u>
TopCooker	Top Cooker
Bottom Refrigerator	Upper Centre..Fridge
	Lower Centre..Space Heater
Bottom Carver Cascade 2GE Water Heater	

NOTE: EACH APPLIANCE TAP IS IN THE "ON" POSITION WHEN THE TAP LIES HORIZONTALLY.

IMPORTANT ALL GAS APPLIANCES SHOULD BE EXTINGUISHED, AND RELEVANT GAS ISOLATION TAPS SWITCHED TO THE "OFF" POSITION WHEN THE VEHICLE IS BEING REFUELLED.

3) COOKER.

a) General. The Trooper is fitted with a stainless steel two burner cooker/grill, fitted with flame failure devices.

b) Layout. The control knobs are found at the front of the unit and operate the following appliances:

- Left-hand Knob Left-hand Burner
- Centre Knob Grill
- Right-hand KnobRight-hand Burner

c) Operation

1. To light appropriate burner:
2.
 - a) Ensure matches/taper are available.
 - b) Turn anti-clockwise to vertical position.
 - c) Light burner.
 - d) simmer:
3.
 - a) Push in knob and turn fully anti-clockwise.
4.
 - a) Push in knob and turn fully clockwise.
 - a) To light the grill the same action as that described above should be carried out.
 - 1) IMPORTANT: ONLY USE THE COOKER WHEN THE VEHICLE IS STATIONARY.
 - 2) ONLY USE COOKER AND GRILL WITH LID OPEN AND SPLASH PLATES
 - 3) IN THE RAISED POSITION.
 - 4) GRILL FLAP.
 - 5) ALWAYS ENSURE THERE IS AMPLE VENTILATION WHEN USING THESE APPLIANCES.

4) CARVER CASCADE 2GE WATER HEATER (OPTIONAL)

Water Heater. The optional Cascade 2 GE water storage heater has a six litre (1.3 gallon) 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 spare 1 amp 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.

The Cascade 2 GE may be used with mains electricity as an alternative to the gas operation or in conjunction 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 watt respectively. The mains operation should be via a double pole switched outlet with a contact gap of at least 3mm in each pole and fused at 5 amp.

The temperature of the water of the gas operation may be adjusted and is set to give a water temperature of between 52°C to 70°C.

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 re-settable over temperature trip thermostat which may be reset by pressing the button that passes through the plastic housing cover of the 240 volt components. Access to this button is through the hole in the rear panel of the cupboard that houses the gas isolation taps.

Operating Instructions.

1. BEFORE SWITCHING ON.

- a. Ensure that the gas to the heater is turned on and that the system is full of water ie. a constant flow of water from the hot tap.
- b. Check that the 12 volt supply is connected and switched on. DO NOT use a battery charger as the only source of supply.

2. TO LIGHT THE HEATER.

- a. Move the slide switch on the controller downwards.
- b. A continuous green light indicates that the heater is working satisfactorily.

3. TO SWITCH THE HEATER OFF.

- a. Move and slide switch upwards.

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.
- 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 lose the small rubber 'O' ring that seals the drain plug.
- 5) When the heater is empty the drain plug and 'O' ring should be refitted. (Please note that it takes a considerable length of time to drain the water heater. At least six litres (1.3 gallons) should drain from the system.)

Water System

The remainder of the water system should be drained by:

- 1) Emptying the fresh water tank by opening the stop tap fitted to the tank.
- 2) Opening the hot and cold water taps in the sink. 3) Turning on the water pump.
- 4) Turn off the water pump and stop tap in the rear of the tank.

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

5) OPTIONAL THERMOSTATICALLY CONTROLLED BLOWN AIR HEATING SYSTEM.

- 1) General. The Trooper may be fitted with the optional Propex 1600 Watt heater which is situated in a compartment at the base of the unit to the rear of the toilet compartment. The heater is of the room sealed 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 tap is situated in the cupboard adjacent to the chemical toilet - lower centre tap.
- 2) 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. 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 recognized.

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 the system and the switch recycled.
- 3) Fresh Air Operation. The unit may be operated on a cold air cycle by switching the rocker switch on the unit control panel, found on the offside pelmet, to the fresh air mode (marked with fan symbol).
- 4) In hot weather conditions, the unit may start automatically; this is part of the self cooling system and thus should not be cause for concern.

6) REFRIGERATOR

- a) General. The Electrolux RM212F refrigerator can be operated by any one of three power sources:
 - (1) Electrical 12 volt; available only when engine is running.
 - (2) Electrical 220/240 volt; available when on site.
 - (3) LP Gas.
- b) Level. When the refrigerator is operating, refrigerant trickles through the cooling unit under the influence of gravity. To enable a satisfactory flow to take place, the unit must be level in both directions, otherwise refrigerant can accumulate in pockets and the cooling process impaired. When your Auto-Sleeper is stationary for more than half an hour, with the refrigerator in use, it must be levelled in both directions so that the ice tray shelf inside the frozen food storage compartment is level.
- c) Starting the Refrigerator. Before using the refrigerator for the first time, it is advisable to wash the interior and accessories as described later under 'Cleaning'.

d) Bottled Gas Operation - Lighting the Burner.

- (1) See that the voltage selection switch (right hand rocker switch on panel) is set at '0', ie. in its centre position.
- (2) Turn on gas isolation tap (topmost tap) in floor cupboard below sink unit.
- (3) Turn the gas control knob so that the number '3' is opposite the indicator mark.
- (4) Switch on red electronic ignition switch which will begin to flash.
- (5) Press in gas control knob.
- (6) When gas is lit, electronic ignition switch will stop flashing.
- (7) Leave electronic ignition switch in ON position, to enable fridge to relight in case of gas flame becoming extinguished.

e) Electrical Operation.

12 Volt Operation

1. Ensure gas is switched off.
2. Turn rocker switch to position marked with a battery symbol.
3. Turn on switch on electrical control panel.
4. Switch on vehicle ignition and start engine, the refrigerator will now be working on 12 volts.

240 Volt Operation

1. Ensure gas is turned off.
2. Turn rocker switch to position marked with site lead symbol.
3. Ensure mains hook-up is connected.
4. Turn on 240 volt RCCD (which is in the 'UP' position).
5. Turn on 5 amp MCB (which is in the 'UP' position).
6. Turn temperature control knob to required setting.

f) Useful Tips

- (1) It is important to note that the 12 volt operation is only intended to be used whilst the engine is running and the vehicle battery is being charged, and thus for 12 volt operation the refrigerator is wired through the vehicle ignition switch.
- (2) When at rest for more than a short period the vehicle should be levelled and the refrigerator switched either to gas or mains voltage.
- (3) When operating on mains voltage, the temperature in the refrigerator is thermostatically controlled and can be adjusted by means of a thermostat knob.
- (4) During 12 volt operation the refrigerator is not thermostatically controlled and the cooling unit will operate all the time the refrigerator is connected to 12 volt source and switched on. 12 volt operation is, therefore only intended to be used for relatively short periods, ie; when the vehicle is in motion. It is not intended for extended periods of use from a 12 volt supply, otherwise the fresh food compartment may become too cold for satisfactory storage of frozen foods and drinks.

g) Temperature Regulation

- (1) After starting the refrigerator, it will take about one hour before there are signs of cooling. When operating on mains voltage electricity, the refrigerator is thermostatically controlled and the thermostat knob should be turned to number '3' or '4' setting. This will maintain a suitable temperature in the refrigerator and frozen food compartment for general use but in hot weather, or if more cooling is required, the knob should be turned to a higher number. Alternatively, if less cooling is required, the knob should be turned to a lower number. (Note: This does not apply to 12 volt operation which is not thermostatically controlled).
- (2) For operation on gas, the refrigerator should be started off with the gas control set at '3'. This will be a suitable temperature in the refrigerator in warm weather but if the fresh food compartment becomes too cold, especially in cooler weather, turn the gas control knob to '2' or '1'.

h) Travel Catch

- (1) The travel catch is to keep the refrigerator door securely closed when the vehicle is on the move. Remember always to push the catch down so that its lower end fully engages the plastic bush in the top of the door before moving off.

i) Defrosting

- (1) Frost will gradually form on and in the frozen food storage compartment and on the fins at the side of this compartment. The refrigerator, therefore should be defrosted regularly, about once every week or ten days depending on the conditions of use
- (2) To defrost, turn the gas control knob or the voltage selector switch to '0', depending on which operation is being used. Remove the ice tray and content of the refrigerator, wrap frozen food in several layers of clean newspaper and place the package in a cool place.
- (3) To defrost as quickly as possible, a small dish of hot (not boiling) water may be placed on the ice tray shelf and a bowl of hot water on the cabinet shelf, changing the hot water as necessary until the frost has melted.
- (4) Note: Do not place dishes of hot water on the bottom of the frozen food storage compartment and do not attempt to defrost more quickly with an electric fire or other forms of heat as this may damage the plastic surface.
- (5) Defrosted water will run via a tube at the back of the refrigerator into the drip collector fixed to the rear of the refrigerator where it will evaporate into the circulating air. When all the frost has melted, wipe dry the frozen food storage compartment and cabinet interior, then restart the refrigerator setting the gas control knob or voltage selector switch and thermostat knob to their respective positions.
- (6) Replace the fresh and frozen food but wait until the cabinet has cooled down before making ice. Remember that if the temperature of the frozen food is allowed to rise unduly during defrosting, its storage life may be shortened.

j) Cleaning the Refrigerator

- (1) Clean the refrigerator thoroughly at intervals when necessary. Turn off the gas or disconnect from the electricity supply depending on which is being used, empty the cabinet and defrost.
- (2) The refrigerator and its accessories may then be cleaned with soft cloth soaked in a weak solution of bicarbonate of soda. Finally wipe over with a clean cloth. Do not wash any plastic parts in water that is more than hand hot and do not expose them to dry heat. Never use strong chemicals or abrasive cleaning materials on any part of the refrigerator.

k) When Not In Use

- (1) Whenever the refrigerator is to be out of use for a period, turn off the gas, or disconnect from the electricity supply as applicable. Empty the cabinet and defrost. Clean and thoroughly dry all accessories and leave the door open. Empty and dry the ice tray.

l) Maintenance. For details of maintenance, see manufacturers instructions.

m) Electrolux Winter Covers

Winter covers are to be used only under the following circumstances:

- (1) When washing the vehicle.
- (2) When the vehicle is in storage.
- (3) When the temperature outside the vehicle is below freezing

Winter covers are not to be used under any other circumstances and **never** when the refrigerator is in operation on either gas, 12 volt or 240 volt.

IMPORTANT: FOR SAFETY REASONS DO NOT USE GAS APPLIANCES WHILE THE VEHICLE IS IN MOTION.

THE REFRIGERATOR ELECTRONIC IGNITION MUST BE SWITCHED OFF WHEN THE VEHICLE IS IN MOTION AND WHILST IT IS BEING REFUELLED. WHEN DRIVING THE REFRIGERATOR SHOULD BE OPERATED ONLY ON 12 VOLT DC.

7) ELECTRICAL SYSTEM12 Volt

The electrical supply for the internal lighting, water pump and the 12 volt circuit for the refrigerator is taken from the vehicle battery with the refrigerator wired separately and controlled via a relay through the ignition switch. A second battery may be fitted as an optional extra in which case a split charge relay is wired between the batteries to prevent the vehicle battery from becoming discharged.

240 Volt

240 volt mains supply is fitted for the operation of the refrigerator and 13 amp plug only. An external socket is located at the rear offside of the vehicle for use with mains hook-up.

Electrical Components

- (1) Battery. The vehicle battery is located under the bonnet. When a second battery is fitted, to petrol engined vehicles this is positioned next to the vehicle battery. In the case of diesel models the main vehicle battery is found under the bonnet whilst the second battery is located at the rear of the vehicle in the lower luggage compartment.

(2) Internal Lighting.

a) Double filament 16w fluorescent lights are fitted in the following positions:

- 1) In the rear of the driving compartment.
- 2) At rear of the vehicle on the underside of upper bed assembly.

b) One 12 volt 13 watt light is fitted on the pelmet rail on the centre offside of the vehicle.

c) Before changing tubes disconnect battery.

d) Fluorescent tubes should be replaced as follows:

- 1) Double filament 16 watt lights. The light mounting must first be removed and then the four screws on the rear side of the light body removed to give access to the tubes, having first disconnected the battery.

- 2) Single filament 12 volt 13 watt light. Carefully slide off the end of the light unit and slide out the diffuser. This will give access to the tube allowing it to be changed.

e) Two internal courtesy lights are fitted, one at the centre front of the cab roof, the other above the pelmet above the entrance of the side sliding door. For details of how to remove these lights in the event of bulb failure refer to the Volkswagen instruction manual.

(3) Water Pump. The water pump fitted to the Trooper is to be found in the rear of the cupboard housing the chemical toilet. Access to the pump is through an easily removable panel at the rear of the cupboard. The water system may be operated by switching on the over-ride switch found in the electrical control panel, and thereafter controlling the flow of water, and the operation of the water pump, by means of the water faucet. The water pump, which is of the triple diaphragm type, is protected by the 10 amp fuse found in the electrical control panel.

8) ELECTRICAL CONTROL PANEL.

a. The electrical control panel is situated in a panel above the kitchen storage locker. It should be noted that the following fuses protect the circuits below;

Fuse No 1 (10 amp)	Lighting Circuit
Fuse No 2 (10 amp)	Water Pump.
Fuse No 3 (2 amp)	Refrigerator ignition and water gauge.
Fuse No 4 (10 amp)	12 volt socket outlet
Fuse No 5 (10 amp)	Propex Heater (Optional)
Fuse No 6 (5 amp)	Carver Cascade gas ignition (Optional)

b. ApplianceLoading

Carver Cascade 2 GE Water Heater	660 watts = 2.5 amp
240 volt AC light	25 watts = 0.1 amp
Electrolux Refrigerator RM212F	100 watts = 0.44 amp
13 amp Socket	N/A up to 10 amp
240 volt AC fuse switch (Cascade) -	N/A.

The electrical control panel incorporates the following additional facilities:

c. Refrigerator 12 volt operation lights. This illuminates when the refrigerator is operating on the 12 volt system.

d. 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 11 volts and recharging should take place as soon as possible.

e. 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.

f. 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. Dry running may not blow the fuse but can cease the water pump.

g. 12 Volt Socket Outlet. This socket should be used only with the plug supplied. It is suitable for only 12 volt DC operation up to a maximum of 10 amps. When connecting the 12 volt plug it should be noted that the centre terminal is POSITIVE and the outer terminal NEGATIVE.

h. Water Level Indicator. In order to check the water level gauge 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 water level gauge, fill the water tank fully, then press and hold READ button setting the indicator to the FULL position.

8) BATTERY/SECOND BATTERY

Both the vehicle battery and optional second battery when fitted are fused with a 20 amp blade fuse. It should be noted that this fuse protects the 12 volt circuit to the electrical control panel and caravan electric's only. This fuse is fitted adjacent to the positive terminal of the vehicle battery/second battery. When a second battery is fitted, a 30 amp blade fuse is fitted between the 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.

7) OPERATION AND MAINTENANCE OF OPTIONAL SECOND BATTERY

1) General. The second battery is charged via the main vehicle battery by the engine alternator.

Wired between the batteries is a 70 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 thus isolating the second battery from the main vehicle battery. When the second battery is fitted, all auxiliary equipment fitted by Auto-Sleepers is wired through it thus ensuring the main battery remains charged.

2) Maintenance. Terminals should be periodically cleaned and greased. The anchorage of the second battery should be regularly checked for security.

NOTE. Auxiliary electrical equipment such as radios and courtesy lights are wired through the main vehicle battery.

8) a) 240 Volt AC Mains Hook-Up. The mains circuit is protected by an RCCD (Residual Current Circuit Device) and two MCB's (Miniature Circuit Breakers) These units are co-located and are found on inside the cupboard adjacent to the chemical toilet.

b) Operation of Mains Hook-up.

The vehicles mains inlet is on the offside of the vehicle toward the rear. In order to connect the Mains Hook-Up the following should take place:

- 1) Ensure vehicle RCCD and MCB's are in the "OFF" position. 2) Ensure all appliances are in the "OFF" position and no appliance is connected to the 13 amp socket.
- 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).

With the mains hook-up connected, the following should then be carried out:

- 1) Switch main RCCD to "ON" position (ie UP position).
- 2) Press test button (located adjacent to RCCD switch). This should cause the main switch to trip off. 3) Return main switch to "ON" position.
- 4) Switch 10 amp MCB to "UP" position (ON position). This current protects and controls the refrigerator 240 volt operation.

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

1. Switch the main RCCD ON, (which is in the UP position)
2. Press the test button (located adjacent to RCCD switch) **This should cause main switch to trip.**
3. Return main switch to ON position
4. Switch the 10 amp MCB to the UP position, (ON). This circuit controls the 240 volt mains socket.
5. Switch the 5 amp MCB to the UP position, (ON). This circuit controls the appliances detailed at paragraph 8b.

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 OR A QUALIFIED ELECTRICIAN.

8) WATER SYSTEM

a. General. A 77.7 litre (17 gallons) fresh water tank is fitted.

As an optional extra a 29.7 litre (6.5 gallon) waste water tank is available. 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 offside of the vehicle.

b. Water Level Indicator. The water level indicator is fitted in the electrical control panel and is operated by the press button adjacent to the 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.

d. Water Filter. The water filter is fitted to the top of the water pump. The 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.

f. Waste Tank (Optional). The optional waste tank is fitted immediately to the front of the offside rear wheel. 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 situated at the rear of the tank.

g. Winter Storage. If the vehicle is to remain unused during the winter months the water system should be fully drained.

h. Systems Diagram. A systems diagram showing the mounting and location of all water appliances is shown at Annex B.

OPERATION OF ELEVATING ROOF

The Trooper is fitted with an insulated elevating roof, the operating instructions for which are as follows:

a) To Raise Elevating Roof. In order to raise the elevating roof, the following actions should be carried out having first ensured that the upper roof bed is in the correct stored position with the mattresses stored centrally, thus giving access to the rear roof retaining handle.

- 1) Remove travel catch from locked position on front roof anchorage
- 2) catch.
Remove retaining strap from rear locking bar.
- 3) Release front roof anchorage catch.
- 4) Move rear roof bar retaining catch downwards until in vertical
- 5) position.
Using handles, push roof upwards into fully extended position.
- 6) Hinge roof panels upwards to required position and lock at either end.

b) Lower Elevating Roof. The action described above should be reversed.

IMPORTANT: UNDER NO CIRCUMSTANCES IS THE VEHICLE TO BE MOVED WITH THE ROOF IN THE ELEVATED POSITION.

IMPORTANT: SIDE PANELS MUST ALWAYS BE LOCKED IN POSITION BY USE OF THE LOCKING CATCHES AT BOTH ENDS.

IMPORTANT: IN THE EVENT OF ONE SIDE PANEL BEING LOWERED FOR ADDED VENTILATION, THE OPPOSITE SIDE PANEL MUST BE LOCKED IN THE VERTICAL POSITION.

IMPORTANT: BEFORE MOVING OFF, THE ELEVATING ROOF MUST BE LOCKED IN THE "DOWN" POSITION **WITH THE FORWARD CATCH APPLIED, THE FORWARD TURNBUCKLE CLIP SECURED ON THE CATCH IN A HORIZONTAL POSITION AND WITH THE REAR LOCKING BAR IN THE FORWARD LOCKED POSITION WITH THE SAFETY STRAP**

MAINTENANCE

- (1) WORK SURFACES. Laminated work surfaces are fitted to all furniture units. Whilst these are hard wearing 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 hard wood 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 first with two coats of polyurethane varnish and finally buffed up with 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 damage to the material will result.
- (4) EXTERIOR PAINTWORK AND FIBREGLASS. Exterior paintwork and fibreglass should be regularly washed and polished with a non-abrasive car wax.
- (5) 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 EXTERMELY HAZZARDOUS AND SHOULD BE AVOIDED AT ALL TIMES.**
- (6) GAS FLEXIBLE RUBBER HOSES. Inspect flexible hoses regularly for deterioration and re-new, as necessary, with the approved type, in any case no later than the expiry date marked on the hose.
- IMPORTANT: ALL FLEXIBLE HOSES MUST BE REPLACED ANNUALLY WITH NEW HOSE TO BRITISH STANDARD 3212/1.**
- (7) GAS INSTALLATION. **IMPORTANT: GAS INSTALLATIONS MUST BE INSPECTED ANNUALLY BY QUALIFIED PERSONNEL. IF IN DOUBT CONTACT YOUR LOCAL AUTO-SLEEPER DEALER.**
- (8) REAR SEAT LAP 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 RESTRAINTS HAVE BEEN WORN, THEY MUST BE REPLACED BEFORE THE VEHICLE IS USED AGAIN.**

IMPORTANT NOTICE

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.

SAFETY PRECAUTIONS

GAS APPLIANCES

AND FITTINGS

OPERATING INSTRUCTIONS

Please read the instructions and labels provided with your vehicle 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.

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.

CYLINDERS

Cylinders must be sited away from any heat source, in a well ventilated place and must stand in a stable upright position. Cylinders should only be stored in the gas locker; the cover should always be clipped firmly into position and the rubber seals in the gas compartment should be inspected at least once a year, and replaced as necessary.

REGULATORS

It is important to ensure that the correct type of 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-en' or 'clip-en' connectors consult your dealer on the type of adapter or regulator you require and fit in accordance with the manufacturer's instructions.

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.

HOSE AND CLIPS

British standard hose only must be used for passing these gases and it must be securely attached with hose clips to the ends provided.

LEAKS

After connecting appliances/regulators, etc, check that there is no leak of gas before using. 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.

MAINTENANCE

Like any other piece of equipment, the appliances fitted to your Auto-Sleeper will need regular servicing and cleaning, as directed in the manufacturers handbook.

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, turning on the cylinder valve does not allow gas to escape from the appliance before being ignited.

FIRE

If a fire develops, 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 from the area.

PROBLEMS

If you are in any doubt about the operation of the appliances fitted to your Auto-Sleeper 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.

GAS SYSTEM

A diagram showing the gas system layout is shown at Annex A.

SAFETY PRECAUTIONS ELECTRICAL SYSTEMS

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.

FUSES

Always replace blown fuses with a correct rating equivalent. Fuses rated at 7.5 amp may be replaced with an 8 amp fuse in case of difficulty in purchasing a 7.5 amp fuse.

OVERLOAD

Never overload any electrical circuit especially the 12 volt socket outlet and the battery charging system. The rating of equipment should be checked before connection.

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 RCCD is easily accessible at all times.

WIRING DIAGRAM

A wiring diagram is to be found in the rear of this instruction booklet. If in doubt refer to this diagram and if necessary contact your local Auto-Sleeper dealer who will be pleased to answer any of your queries. An electrical fault diagnosis table is also to be found adjacent to the electrical wiring diagram. This table should be referred to in the event of any electrical problem.

SAFETY PRECAUTIONS – FIRE

IN CASE OF FIRE: GET EVERYBODY OUT, then

1. Switch off engine
2. Switch off fuel/electricity/gas valves
3. Disconnect mains electrical supply.
4. Raise the alarm and call the Fire Brigade
5. Tackle the fire if it is safe do to so

FIRE PRECAUTIONS

1. Children should not be left alone in this Motor Caravan
2. Keep combustible materials clear of all heating and cooking appliances.
3. Provide at least a one kg fire extinguisher, to BS 5423 by the main exit door and a fire blanket next to the cooker. Make yourself familiar with the instructions on your fire extinguisher and the fire precautions arrangements on the site.
4. Means of Escape - Make sure you know the location and operation of emergency exits, keep all escape routes clear.

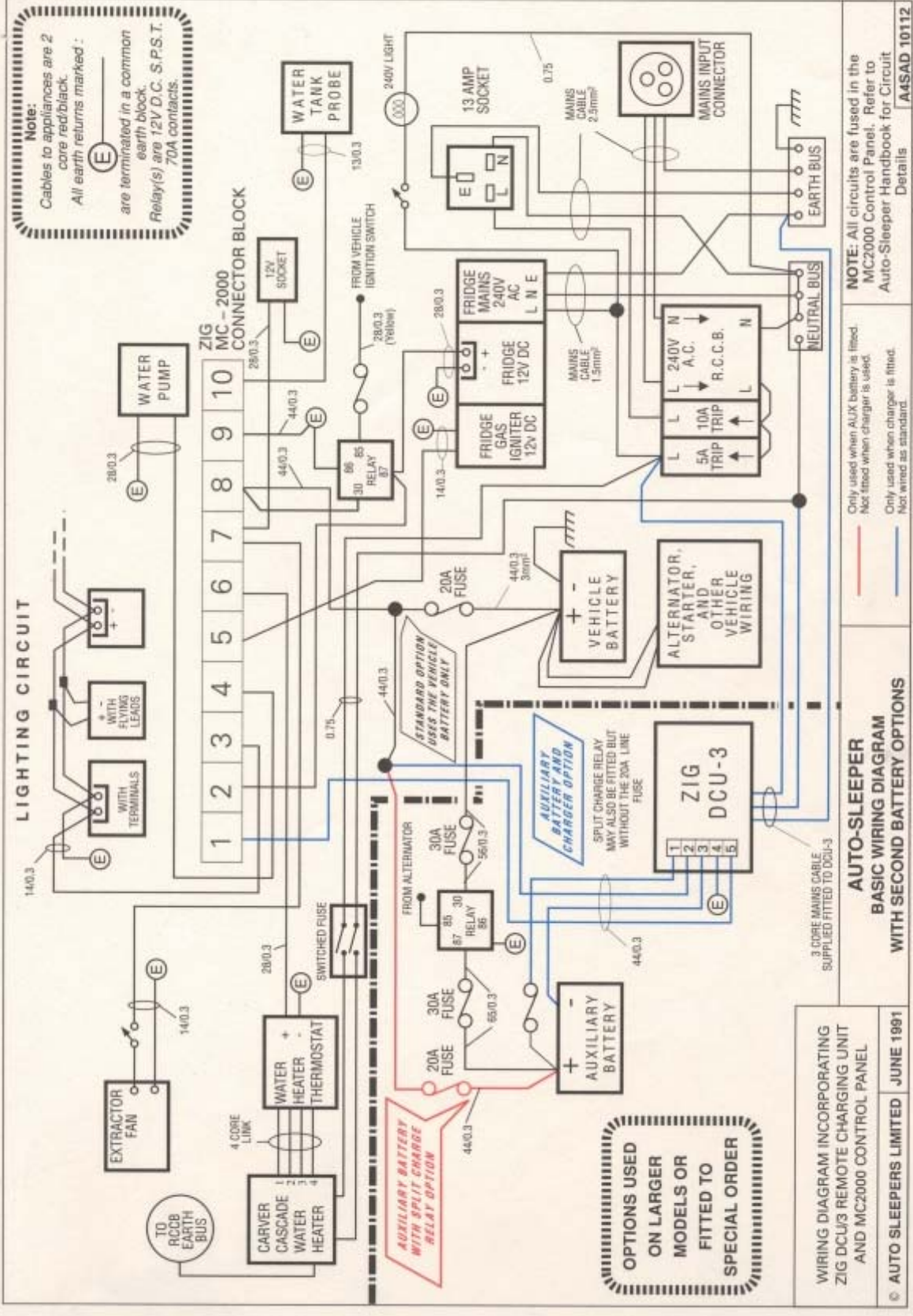
SAFETY PRECAUTIONS – GAS

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.
5. If your vehicle does not have a factory fitted heater and one is required we recommend that a room sealed heater with an output of 1600 watts should be fitted by a qualified fitter in accordance with the appliance manufacturer's instruction and the requirements of BS 5482 Part 2 by a qualified fitter. Under no circumstances should a solid fuel appliance be fitted.
6. When the refrigerator is operating on LPG, the forward offside caravan window must not be opened beyond the point shown on the warning label. In the event of this label being removed, the distance beyond which the sliding forward offside window is to be opened is not more than 300mm (114").

AUTO-SLEEPER ELECTRICAL FAULT DIAGNOSIS

FAULT	CAUSE	REMEDY
No power on any 12v circuits	Battery fuse 20A blown	Check fuse. Replace
	Battery connection off	Check for secure connections
	Wire off at fuse	
Battery not charging	Battery flat/very low charge	Check condition of battery Recharge/Replace
	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 ampere hour rating incompatible	Use equal ampere hour rating Aux battery
Battery fuse constantly blowing	Short circuit	Test for short circuit to earth
	Incorrect fuse fitted -(less than 15 amp)	Check fuse rating must be be 20-30 amp blow rated
	Reverse polarity on battery	Check for correct polarity
Fuse 4 on panel blowing when appliance is plugged into 12v socket	Overload - due to appliance consumption greater than 10 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 circuit to occur	Clean and insulate completely Replace is necessary
Fridge not operating on 12 v	Connection to pin of vehicle fuse box has been removed.	Re-connect
	Fridge fuse on electrical control panel blown	Check Fuse
	Relay at rear of electrical control panel not operating	Test relay for operation
	Heater element on fridge faulty Check fuse	Contact Electrolux Service department

FAULT	CAUSE	REMEDY
Fridge ignition not operating	Fuse No 3 on electrical control panel blown Spark unit on fridge faulty Switch faulty	Check fuse Replace spark unit Test switch for operation
RCCD not operating	Faulty RCCD unit No 240 AC supply present	Test - change RCCD if necessary Test - check plugs are fully located in sockets
RCCD constantly tripping unable to reset	Supply fault Earth fault Incorrect wiring	Check input lead wiring
10 amp MCB tripping	Appliance fault/Short circuit Overload due to appliance being used which is rated at more than 10 amps	Check for suitability of appliance eg current consumption rating should not exceed 10 amp
5 amp MCB tripping	Fault on fridge unit	Check fridge
Battery Charger system		
No power on 12 v dc circuits	Overload trip on battery charger out Short on a 12 v circuit	Reset trip Test for short
Red indicator (Batt on charge) off on electrical control panel	Battery fully charged Fault on battery charger unit Wiring at battery charger incorrect 4 Core cable incorrectly wired at battery charger panel	Check condition of battery Check battery charger unit, replace if necessary Check wiring Check polarity of 4 core at both points



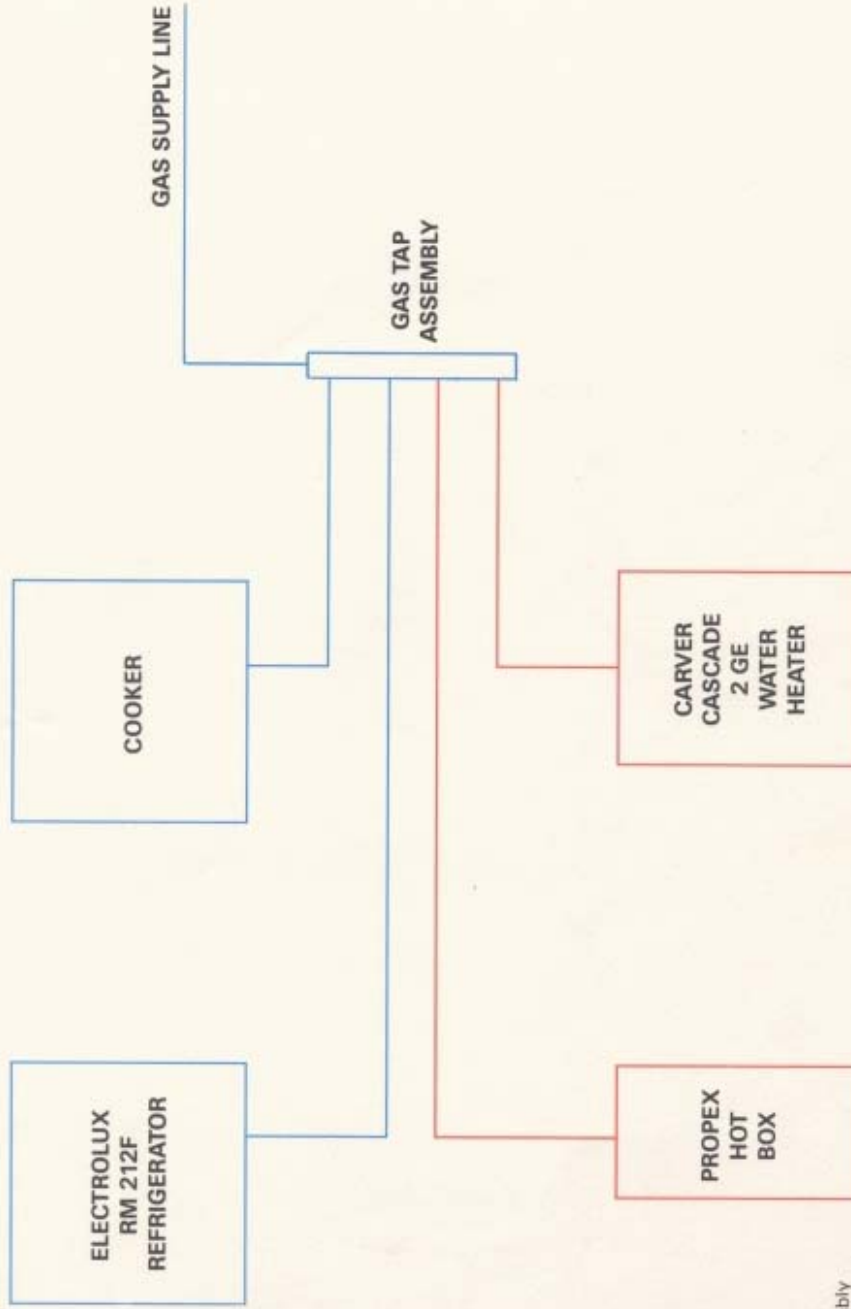
Printed by E. P. Lowe Limited, Boreham, Wrocs.

LA5AD 10112

© AUTO SLEEPERS LIMITED JUNE 1991

GAS SYSTEM VOLKSWAGEN T4 TRIDENT/TROOPER

ANNEX A
TROOPER/TRIDENT



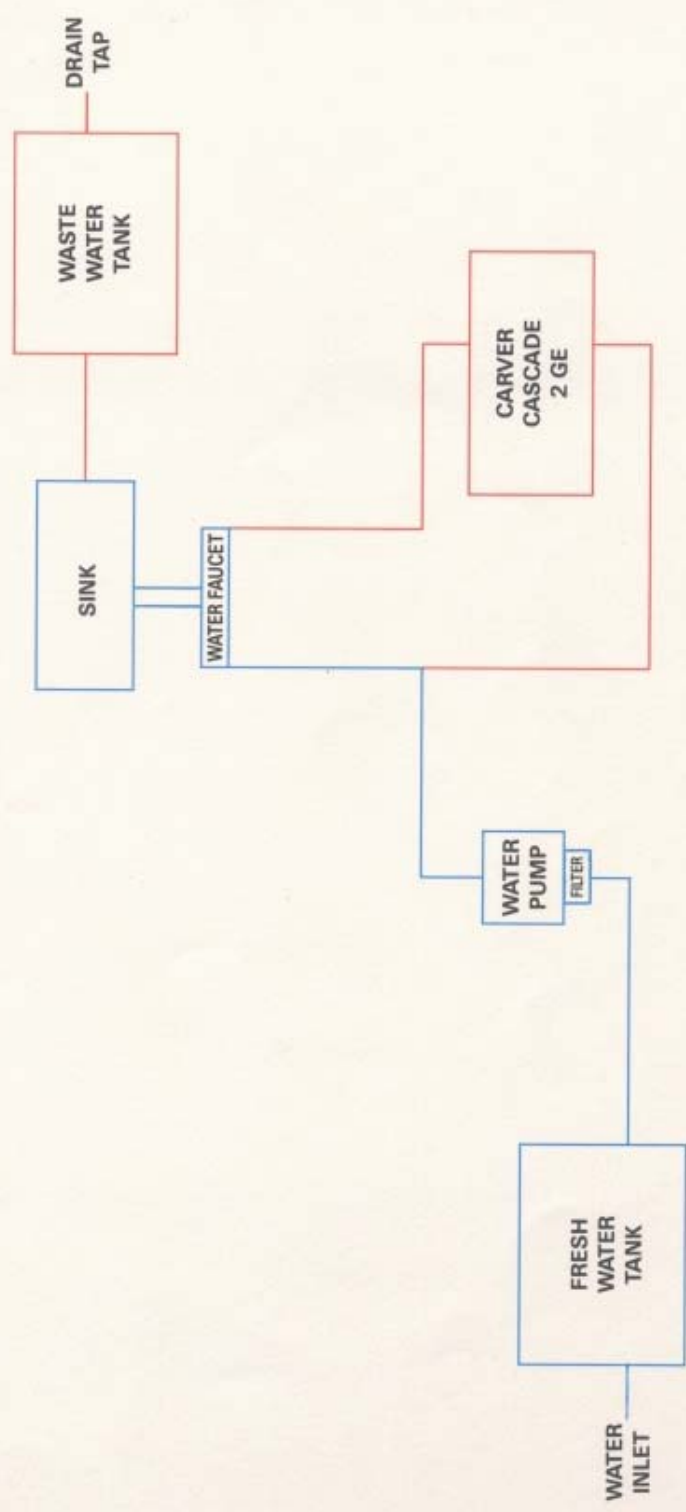
NOTES:

1. Gas Tap assembly varies from 2-4 taps according to options fitted.
2. Tap assembly as viewed from inside of vehicle.

— = Standard Equipment
— = Optional Equipment

WATER SYSTEM VOLKSWAGEN T4 TRIDENT/TROOPER

ANNEX B
TROOPER/TRIDENT
HANDBOOK



— = Standard Equipment
— = Optional Equipment