



# U N I C O R N

Alu-Tech Bodyshell

## Owners Manual



*For those who appreciate  
the finer things in life*

[www.baileyunicorn.co.uk](http://www.baileyunicorn.co.uk)



Model \_\_\_\_\_

Vehicle Identification Number V.I.N. \_\_\_\_\_

Owner's Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Tel. No. \_\_\_\_\_

Key Nos: All Doors \_\_\_\_\_

Retailer's Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Tel. No. \_\_\_\_\_

# Enjoy the widest choice of superb sites



## There's no better value in caravanning

- Access to over 200 Club Sites, many for members only
- Around 2,500 small rural sites, the ultimate escape
- Advance Booking Service for Club Sites
- Free monthly Club Magazine – packed with news and reviews
- Exclusive access to The Club's Caravan and Motorhome Insurance
- FREE expert information and technical advice
- Overseas Travel Service – over 200 inspected European Sites
- Access to Overseas Holiday Insurance and special deals on Caravan Europe guides

You can save your annual subscription in just one week's stay!

Members save £7 a night on pitch fees at Club Sites

Join online today  
[www.caravanclub.co.uk](http://www.caravanclub.co.uk)

or call on 0800 328 6635 quoting Source Code BP10

Calls may be recorded

THE   
**CARAVAN  
 CLUB**

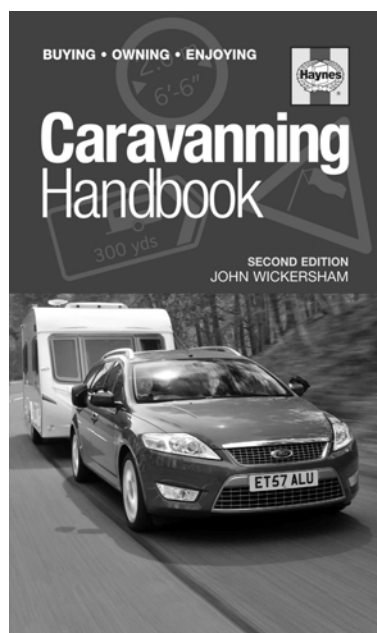
<b>Owner's Details .....</b>	<b>1</b>	3.2.4	Gas safety advice .....	3-8
<b>1.1 INTRODUCTION .....</b>	<b>1-1</b>	3.2.5	Awning Space LPG Appliance Exhaust .....	3-8
<b>1.2 WARRANTY .....</b>	<b>1-2</b>	3.2.6	Gas Leaks .....	3-8
<b>1.3 UNICORN CARAVAN WARRANTY COVER 1-2</b>		3.2.7	Ventilation .....	3-8
1.3.1 6 Year Body Shell Integrity Guarantee .....	1-2	3.2.8	Gas BBQ point .....	3-9
1.3.2 3 Year Manufacturers Warranty .....	1-2	<b>3.3 THE ELECTRICAL SYSTEM – 230 VOLT . 3-10</b>		
1.3.3 Warranty Extensions .....	1-3	3.3.1	On arrival at caravan site .....	3-10
1.3.4 Customer Support .....	1-3	3.3.2	On leaving caravan site .....	3-11
1.3.5 Terms and Conditions .....	1-3	3.3.3	Generators .....	3-11
<b>1.4 CARAVAN REGISTRATION AND IDENTIFICATION SCHEME (C.R.I.S) .....</b>	<b>1-6</b>	3.3.4	Overseas connections .....	3-11
<b>1.5 SAFETY .....</b>	<b>1-7</b>	3.3.5	Mains unit .....	3-12
<b>2.1 INTRODUCTION .....</b>	<b>2-1</b>	<b>3.4 THE ELECTRICAL SYSTEM – 12 VOLT ... 3-13</b>		
<b>2.2 CARAVAN AND TOWING VEHICLE TERMS 2-1</b>		3.4.1	12-volt Control Panel .....	3-14
2.2.1 Measurement of nose weight .....	2-2	3.4.2	Auxiliary Battery storage/mains inlet .....	3-14
2.2.2 The caravan to towing vehicle weight ratio ...	2-2	<b>4.1 ALDE WATER HEATING SYSTEM .....</b>	<b>4-1</b>	
2.2.3 Towing vehicle's rear suspension .....	2-2	4.1.1	Boiler Design .....	4-1
2.2.4 Recommended tow ball height .....	2-3	4.1.2	Description of Functions .....	4-1
2.2.5 Secondary braking cable (Break away device) .....	2-3	4.1.3	The Domestic Hot Water Heater .....	4-2
2.2.6 Loading and distribution of weight in the caravan and car .....	2-4	4.1.4	The Heating Cartridges .....	4-2
2.2.7 Noseweight .....	2-5	4.1.5	The Circulation Pump .....	4-2
2.2.8 Hitching up .....	2-5	4.1.6	System Temperature .....	4-2
2.2.9 Hitching the caravan to the tow vehicle .....	2-6	4.1.7	Air Circulation .....	4-3
<b>2.3 TOWING .....</b>	<b>2-8</b>	4.1.8	Maintaining the Heating system .....	4-3
2.3.1 Speed limits .....	2-8	4.1.9	Filling the System With Glycol Fluid .....	4-4
2.3.2 Pulling away .....	2-8	4.1.10	Bleeding the System .....	4-4
2.3.3 Caravan handling .....	2-8	4.1.11	Fault Finding .....	4-5
2.3.4 Reversing .....	2-8	4.1.12	Control Panel - Functions and Symbols .....	4-6
2.3.5 Motorway driving .....	2-8	4.1.13	Electrical operating instructions (230v) .....	4-14
2.3.6 Mirrors .....	2-8	4.1.14	General Safety Notes: .....	4-14
2.3.7 Passengers .....	2-9	<b>4.2 THE COUNTRY LEISURE COOKING APPLIANCES .....</b>	<b>4-15</b>	
2.3.8 Snaking .....	2-9	<b>4.3 THE LINEAR HOB .....</b>	<b>4-15</b>	
2.3.9 Stabilisers .....	2-9	4.3.1	Hotplate Burners .....	4-15
2.3.10 Road lighting .....	2-10	<b>4.4 THE MIDI OVEN &amp; GRILL .....</b>	<b>4-16</b>	
2.3.11 Types of tyres fitted .....	2-10	4.4.1	Grill .....	4-16
2.3.12 Tyre Wear and Damage .....	2-10	4.4.2	Oven .....	4-17
2.3.13 Tyre pressures .....	2-11	4.4.3	Temperature Control .....	4-18
2.3.14 Wheels .....	2-11	4.4.4	Cooking Guidelines .....	4-18
2.3.15 Spare Wheels .....	2-12	4.4.5	Maintenance & Servicing .....	4-19
2.3.16 Changing a Wheel .....	2-12	<b>4.5 THE FIRE SENTRY SMOKE ALARM .....</b>	<b>4-20</b>	
2.3.17 Unhitching .....	2-13	4.5.1	False Alarms 'Hush' Control .....	4-20
2.3.18 Levelling the caravan .....	2-13	4.5.2	Testing .....	4-20
2.3.19 Towing brackets .....	2-13	<b>4.6 REFRIGERATORS .....</b>	<b>4-21</b>	
2.3.20 Driving licences .....	2-14	<b>4.7 DOMETIC REFRIGERATOR MODEL RM 8550L .....</b>	<b>4-21</b>	
<b>3.1 THE WATER SYSTEM .....</b>	<b>3-1</b>	4.7.1	Cleaning .....	4-21
3.1.1 Priming the System using the External Water Container .....	3-1	4.7.2	Operating modes and use of the refrigerator .....	4-21
3.1.2 Supplementary Water Tank .....	3-1	4.7.3	Control elements of energy selections (Battery Igniter, MES and AES) .....	4-21
3.1.3 Troubleshooting .....	3-3	4.7.4	Electrical operation .....	4-22
3.1.4 Routine Maintenance .....	3-4	4.7.5	Gas operation (liquid gas) .....	4-22
3.1.5 Cleaning Containers and the System .....	3-4	4.7.6	Door locking .....	4-23
3.1.6 Aquasource Direct Mains Water Connection .....	3-4	4.7.7	Removable freezer compartment .....	4-24
3.1.7 Draining and Winterisation of the Water System .....	3-4	4.7.8	Positioning the storage racks .....	4-24
3.1.8 Setting up the Water System .....	3-5	4.7.9	Exchange of the igniter's battery .....	4-25
3.1.9 Shower tray .....	3-5	4.7.10	Shutting off the refrigerator .....	4-25
3.1.10 Waste (Grey) Water System .....	3-5	4.7.11	Lighting .....	4-25
<b>3.2 THE GAS SYSTEM .....</b>	<b>3-6</b>	<b>4.8 DOMETIC REFRIGERATOR MODEL RM 8501 .....</b>	<b>4-26</b>	
3.2.1 General information .....	3-6	4.8.1	Cleaning .....	4-26
3.2.2 Types of gas .....	3-6	4.8.2	Operating modes and use of the refrigerator .....	4-26
3.2.3 Changing Gas Cylinders .....	3-7	4.8.3	Maintenance .....	4-26

4.8.4	Explanation of operating controls .....	4-26	4.13	<b>HEKI 2 ROOFLIGHT .....</b>	<b>4-51</b>
4.8.5	Electrical operation .....	4-27	4.13.1	To open in the tilted position .....	4-51
4.8.6	Gas operation (Liquid gas) .....	4-28	4.13.2	To open in the intermediate position .....	4-51
4.8.7	Setting of cooling compartment temperature .....	4-29	4.13.3	To open in the ventilation position .....	4-51
4.8.8	Additional features (MES and AES) .....	4-30	4.13.4	Closing the blinds .....	4-52
4.8.9	Frame heating .....	4-30	4.13.5	Opening the blinds .....	4-52
4.8.10	Door locking .....	4-31	4.13.6	Care Instructions .....	4-52
4.8.11	Manual doorlock .....	4-31	4.14	<b>TRACKER MONITOR .....</b>	<b>4-53</b>
4.8.12	Fastening and releasing the doorlock hook when parking the vehicle .....	4-31	4.14.1	To arm .....	4-53
4.8.13	Positioning the storage racks .....	4-31	4.14.2	To disarm .....	4-53
4.8.14	Lighting .....	4-32	4.14.3	Winter storage .....	4-53
4.8.15	Storing food and making ice cubes .....	4-32	4.15	<b>STATUS 530 DIRECTIONAL TV &amp; FM RADIO ANTENNA .....</b>	<b>4-54</b>
4.8.16	Storing food in the cooling compartment .....	4-32	4.15.1	Travelling .....	4-54
4.8.17	Storing food in the freezer compartment .....	4-32	4.15.2	Operating the System .....	4-54
4.8.18	Making ice cubes .....	4-33	4.15.3	VHF Television Reception (Overseas Only) .....	4-54
4.8.19	Shutting off the refrigerator .....	4-33	4.15.4	Fault Finding .....	4-55
4.8.20	Defrosting .....	4-33	4.16	<b>DAEWOO MICROWAVE OVEN .....</b>	<b>4-56</b>
4.8.21	Winter operation .....	4-34	4.16.1	Precautions to avoid possible exposure to excessive microwave energy .....	4-56
4.8.22	Information on failure display and trouble- shooting .....	4-34	4.16.2	Operational Procedure .....	4-57
4.8.23	Status messages on the display .....	4-34	4.16.3	Wattage Output Chart .....	4-58
4.8.24	Troubleshooting .....	4-35	4.16.4	Controls .....	4-58
4.8.25	Maintenance .....	4-36	4.16.5	Weight Defrosting .....	4-59
4.9	<b>THETFORD CASSETTE C-250 TOILET ....</b>	<b>4-37</b>	4.16.6	Time Defrosting .....	4-59
4.9.1	Introduction .....	4-37	4.16.7	Cooking in One Stage .....	4-59
4.9.2	Preparing for use (standard) .....	4-39	4.16.8	Cooking in Two Stages .....	4-60
4.9.3	Using the toilet (standard) .....	4-39	4.16.9	Easy Cooking .....	4-60
4.9.4	Emptying .....	4-40	4.16.10	Auto Cook .....	4-60
4.9.5	Emptying with Optional Features .....	4-40	4.16.11	Child Safety Lock .....	4-61
4.9.6	Cleaning and Maintenance .....	4-40	4.16.12	To Stop The Oven While The Oven Is Operating .....	4-61
4.9.7	Waste Holding Tank .....	4-41	4.16.13	Microwave Specifications .....	4-61
4.9.8	Winter operation .....	4-41	4.16.14	Before You Call For Service .....	4-62
4.9.9	Storage .....	4-42	4.16.15	Questions and Answers .....	4-62
4.10	<b>AL-KO SECURE WHEEL LOCK .....</b>	<b>4-43</b>	5.1	<b>GENERAL MAINTENANCE .....</b>	<b>5-1</b>
4.11	<b>AL-KO ATC TRAILER CONTROL SYSTEM .....</b>	<b>4-44</b>	5.1.1	Exterior .....	5-1
4.11.1	System requirements .....	4-44	5.1.2	Acrylic Windows .....	5-1
4.11.2	Operating instructions .....	4-44	5.1.3	Window Catches and Stays .....	5-2
4.12	<b>THE ALKO CARAVAN CHASSIS .....</b>	<b>4-45</b>	5.1.4	Interior walls .....	5-2
4.12.1	Chassis members .....	4-45	5.1.5	Furniture .....	5-2
4.12.2	Drilling or welding of parts or accessories ...	4-45	5.1.6	Mattresses .....	5-2
4.12.3	Independent suspension .....	4-45	5.1.7	Care of your upholstery .....	5-2
4.12.4	Coupling head .....	4-45	5.1.8	Curtains .....	5-3
4.12.5	Secondary braking (Breakaway cable) .....	4-46	5.1.9	Hinges and Catches .....	5-3
4.12.6	Uncoupling .....	4-46	5.1.10	Shower/Vanity Units .....	5-3
4.12.7	Brake drum/hub assembly .....	4-46	5.1.11	Guidance on Cleaning Portable Water Tanks and the Water System and in Touring Caravans .....	5-3
4.12.8	Operating instructions .....	4-46	5.1.12	For Containers .....	5-3
4.12.9	Coupling .....	4-46	5.1.13	For Systems .....	5-4
4.12.10	Stabiliser Unit: .....	4-47	5.1.14	Caravan Keys .....	5-4
4.12.11	Uncoupling .....	4-47	5.2	<b>FIRE AND SAFETY PRECAUTIONS .....</b>	<b>5-5</b>
4.12.12	Checking the efficiency of the left/right friction pads: .....	4-47	5.2.1	Children .....	5-5
4.12.13	Manoeuvring operation .....	4-47	5.2.2	Fire Extinguishers .....	5-5
4.12.14	Noises whilst driving .....	4-48	5.2.3	In Case of Fire .....	5-5
4.12.15	Remedial Action .....	4-48	5.2.4	Smoke Alarms .....	5-5
4.12.16	Storing .....	4-48	5.2.5	Ventilation .....	5-5
4.12.17	Towing ball .....	4-48	5.2.6	Petrol/Diesel Fumes .....	5-6
4.12.18	Overrunning device .....	4-48	5.2.7	Original Equipment Appliances .....	5-6
4.12.19	Jockey wheel .....	4-49	5.2.8	Portable Appliances .....	5-6
4.12.20	Brake linkage .....	4-49	5.2.9	Modifications .....	5-6
4.12.21	Corner steadies .....	4-49			
4.12.22	Braking system adjustment .....	4-49			
4.12.23	Chassis Lubrication Points .....	4-51			

<b>5.3</b>	<b>BUNK ASSEMBLY .....</b>	<b>5-7</b>
5.3.1	Front bunk assembly .....	5-7
5.3.2	Side dinette top bunk assembly .....	5-8
5.3.3	Side Dinette Bottom Bunk Assembly .....	5-9
5.3.4	Retractable Island Bed Assembly .....	5-9
<b>5.4</b>	<b>WATER SYSTEM - FAULT FINDING .....</b>	<b>5-10</b>
5.4.1	FAULT - Water not flowing from any tap when operated but pump runs .....	5-10
5.4.2	FAULT - Pump does not run .....	5-10
5.4.3	FAULT - Water flows from cold tap but has reduced flow from hot .....	5-10
5.4.4	FAULT - Water flows from hot tap but has reduced flow from cold .....	5-11
5.4.5	FAULT - Reduced flow from both hot and cold taps .....	5-11
5.4.6	FAULT - Reduced flow from either taps .....	5-11
5.4.7	FAULT - Water Heater pressure relief valve venting water .....	5-11
5.4.8	FAULT - Water heater difficult to drain .....	5-12
<b>5.5</b>	<b>BRAKE FAULT FINDING CHART - AL-KO .....</b>	<b>5-13</b>
5.5.1	FAULT - Braking is one-sided .....	5-13
5.5.2	FAULT - The trailer brakes during mild decelerations .....	5-13
5.5.3	FAULT - The trailer brakes snatch when braking .....	5-13
5.5.4	FAULT - Brake judder .....	5-13
5.5.5	FAULT - Trailer brakes lock up when reversing .....	5-13
5.5.6	FAULT - Trailer brakes inoperative .....	5-14
5.5.7	FAULT - Hot brakes .....	5-14
5.5.8	FAULT - Handbrake will not hold trailer on slope .....	5-14
<b>5.6</b>	<b>REFRIGERATOR - FAULT FINDING .....</b>	<b>5-14</b>
5.6.1	FAULT - No 230V fridge operation .....	5-14
<b>5.7</b>	<b>TRACKER - FAULT FINDING .....</b>	<b>5-15</b>
5.7.1	General Questions .....	5-15

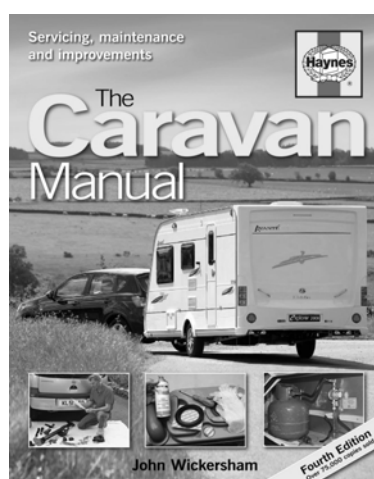
# Congratulations on the purchase of a fine touring caravan!

To ensure you enjoy your caravanning to the full, may we commend the following books from Haynes Publishing? They have been written by John Wickersham whose caravanning articles appear every month in several magazines, including the Members' Magazine of The Caravan Club.



**The Caravanning Handbook.** From Haynes "Glove Box" series, this caravanning handbook offers advice on topics like tow cars and towing, storing your caravan, choosing and using an awning, accessories worth considering, using your caravan's appliances, laying-up a caravan for the winter and dozens of other subjects. The Caravan Handbook by John Wickersham has over 300 pages, hundreds of colour photographs, and an address list of around 145 manufacturers/service providers.

Price: £12.99.



**The Caravan Manual.** Now in its 4th edition, this full colour manual is the ultimate guide to repairs and maintenance. Using the guidance and step-by-step illustrations, many jobs can be carried out by a competent owner. On the other hand this book is used by caravanners who want to find out how things work and to learn about tasks carried out by servicing specialists. Trevor Watson, Director General of The Caravan Club wrote: "This remarkable book covers just about all you will need to know to get the most from your caravan."

Price £17.99.

These notable books are available from all good bookshops.

Or you can order direct from:

**Haynes Publishing on 01963-442030**

**Or visit: [www.haynes.co.uk](http://www.haynes.co.uk)**

## 1.1 INTRODUCTION

Bailey of Bristol welcome you to the ranks of Bailey Owners.

This Handbook has been designed to enable you to derive the maximum benefits and enjoyment from your caravan, its information will be of benefit to both experienced and new caravanners alike.

It should be used in conjunction with the Caravan Service Manual and Quick Start Guide supplied in the Caravan Information Pack. Supplementary user guides for certain components featured in this manual can also be found in the Brochure & Handbook section of the company web site @ [www.bailey-caravans.co.uk](http://www.bailey-caravans.co.uk).

All enquiries regarding your caravan must be addressed in the first instance to the dealer from whom the caravan was first purchased.

Your caravan is designed to give many years of use, regular maintenance is however necessary to ensure trouble free service. Your Bailey Retailer is equipped to offer service facilities, repair work and any spare parts you may require.

Always consult your Bailey Retailer before additional equipment is fitted to ensure appropriate fixing support is available.



- ▲ In any correspondence the caravan V.I.N. should always be quoted, this can be found on the offside chassis member and is etched into all major windows.

Manufactured by:  
BAILEY CARAVANS LIMITED,  
South Liberty Lane, Bristol BS3 2SS, England.

[helpline@bailey-caravans.co.uk](mailto:helpline@bailey-caravans.co.uk)

## 1.2 WARRANTY

Any claims under warranty must be made through the Retailer from whom the caravan was purchased.

It is with the retailer that the purchaser's Contract of Sale exists and consequently Bailey Caravans cannot enter into any discussions with the purchaser.

Bailey retailers sell our products of their own choice and not as agents. They are, therefore, unable to bind Bailey Caravans Ltd or make any representation or undertaking whatsoever on behalf of Bailey Caravans Ltd.

All Bailey products are classified as "portable". All work under warranty requires that the caravan be delivered to and collected from the Bailey retailer.



- ▲ Whilst every effort is made within this Handbook to accurately reflect and describe our home market caravans (those purchased and stored on the mainland) our policy of continued improvements and change in market and supply conditions mean that we reserve the right to alter specifications without further notice. Some materials used in the production of our caravans can result in variations to the figures quoted in respect of measurements and weights.

© Copyright 2009 Bailey Caravans Limited.

## 1.3 UNICORN CARAVAN WARRANTY COVER

Total customer satisfaction is top priority at Bailey and the quality ethos extends to the after sales service and market leading manufacturer's warranty package that comes with every new Bailey Unicorn caravan. In this way we not only ensure long-term peace of mind but also enhance the re-sale value of your investment.

### 1.3.1 6 Year Body Shell Integrity Guarantee

The Bailey Alu-Tech Unicorn caravan is covered by a six (6) year Bodysell Integrity Guarantee from the initial date of purchase. This cover extends to any structural degradation to the bodysell that arises as a result of water ingress through any permanently sealed seams or joints (with the exception of exclusions stated in the terms and conditions.)

#### Warranty Extension

An additional four (4) year extension to the standard Bodysell Integrity Guarantee warranty cover (making 10 years cover in total) is available as a cost option. Please ask your supplying Bailey Retailer for more information.

### 1.3.2 3 Year Manufacturers Warranty

For a period of twenty-four (24) months from the initial date of purchase Bailey of Bristol offer a comprehensive warranty on all parts and components as well as full coverage for any manufacturing faults forming part of the original specification of the vehicle. The manufacturer's warranty then extends to an additional twelve (12) months on the following items

**Chassis:** all chassis members including corner steadies

**Suspension:** axle suspension and braking system (excluding any damage to or faults in brake drums and shoes that are caused through misuse of the braking system or from normal wear and tear)

**Running Gear:** road wheels (excluding tyres)

**Towing Mechanism:** all mechanical components fitted to vehicle (excluding electrics)

**Cooker:** the cooker unit including burners, grill, oven, hot plate, flame failure device and igniter

**Refrigerator:** door seal condenser, gas control valve, gas igniter, flame failure device, 230v heater elements, gas thermostat, thermostat and temperature control switch

**Water System:** water heater (gas or electric), fresh water tank, water pump, water gauges, taps and shower head

**Electrical System:** mains hook up input connector, ELCB, and interior lighting units (excluding bulbs and LED's)

**Cassette Toilet:** the cassette toilet is covered (excluding seals, valves and glands)

**Heating System:** thermostat, motor, switches, control unit, gas heater, flame failure device and igniter (excluding ducting and fittings)

**Windows:** the functionality of the opening and closing system (stays, handles and catches) and a warranty against the cracking of the acrylic

**Upholstery:** zips, seams and colour fastness

### 1.3.3 Warranty Extension

An additional three (3) year extension to the standard Manufacturer's Warranty cover (making 6 years cover in total) is available as a cost option. Please ask your supplying Bailey Retailer for more information.

### 1.3.4 Customer Support

In the unusual event of something going wrong your first contact should always be your supplying retailer. Approved Bailey Retailers enjoy industry-leading after sales support service from the manufacturer and they should be able to offer all the help you need to rectify any problems that may exist.

### 1.3.5 Terms and Conditions

The Bailey Warranty Cover set out above is offered subject to the following simple terms and conditions:

#### Cover

1 During the term of the Warranty Cover, subject to these terms and conditions, Bailey will, through an Authorised Service Centre, at its option repair or replace all parts and components of the Unicorn caravan that are included in the Warranty Cover and which suffer a defect in manufacture or workmanship. An Authorised Service Centre means either Bailey itself, a Bailey Approved Retailer or a Bailey Approved Service Centre. Any part which is replaced becomes the property of Bailey. Any replacement parts are covered for the unexpired term of the Warranty Cover.

#### Term

2 The initial duration of the Bodysell Integrity Guarantee is six (6) years and the duration of the Manufacturer's Warranty is three (3) years in both cases starting from the original purchase date of the vehicle. It is a condition of the warranty that an annual service is performed on the vehicle in accordance with the service plan. Failure to comply with this term will invalidate the warranty.

3. The unexpired term of the Warranty Cover on your vehicle may only be assigned, transferred or novated to subsequent owners with Bailey's consent (not to be unreasonably withheld) and on payment to Bailey of a transfer fee of £35. Transfer can only be made within the first three months (3) of subsequent ownership and full documentary evidence that the vehicle has been serviced annually must be provided at the time of assignment in accordance with the terms and conditions detailed above.

### Repairs

4 The Unicorn caravan must undergo a full annual service and inspection, including a moisture survey, carried out, subject to paragraph 5 below, by an Authorised Service Centre. The final annual service in the warranty period must be carried out before the end of that warranty period, but all other annual services may be carried out within six (6) weeks either side of each anniversary of the original purchase date. The original VAT invoices must be retained as proof that these annual inspections have been carried out.

5. During the first three (3) years of the Warranty Cover, all annual inspections and repairs must be carried out either by Bailey itself or an approved Bailey Service Centre or Agent. Thereafter, due to the technical nature of an Alu-Tech constructed caravan, annual inspections and repairs may be carried out by any workshop or repair centre approved by the National Caravan Council that has attended Alu-Tech training courses at the Bailey factory.

6. Where an annual inspection identifies that repairs to the vehicle are necessary, the Unicorn caravan must be made available for repair within six (6) weeks of the date of inspection for the purpose of carrying out the repair work.

7. No repairs, including the fitting of any replacement unit, may be undertaken or commenced under the terms of the Warranty Cover unless prior written authorisation is obtained from Bailey via an authorised Bailey Retailer or Service Centre. No liability will exist with regard to any warranty claims not authorised in this way.

8. Bailey reserve the right to examine the vehicle before any repairs commence or any replacement part is fitted.

### Registration & Use

9 The Warranty Registration Form must have been sent to Bailey within six (6) weeks of the original purchase date. It is the responsibility of the Bailey Retailer to forward this information to Bailey. This is part of the terms of trading that the Bailey Retailer has with Bailey.

10. The Unicorn caravan shall:

(a) only be used for its ordinary and intended purpose and shall not be subjected to any treatment or conditions which could reasonably be foreseen to cause or result in damage to the vehicle or excessive wear and tear;

(b) only be towed by a private car or private 4 x 4 vehicle; and

(c) not be put out to hire, reward or any other commercial use, nor used in any race, competitions or rallies whether timed, official or otherwise.

### Exclusions & Liability

11 Bailey's liability under this warranty shall be limited to supplying the reasonable costs of labour and materials required for the repair or replacement of faulty parts or components. Bailey shall be entitled to charge for any repair work which is necessitated by virtue of any loss or damage caused by your negligence or default or incurred as a result of any modifications you have made to the vehicle. This warranty does not cover repair costs other than labour and materials.

12. The Warranty Cover does not include:

(a) repair or replacement of parts, components, seams or panels which are not part of the original construction of the Unicorn caravan, or which have been tampered with or undergone unauthorised modifications, or which have been repaired otherwise than by an Authorised Service Centre;

- (b) parts or components other than those specifically listed in the Bodysell Integrity Guarantee and Manufacturer's Warranty descriptions set out above;
- (c) general maintenance or components failing due to fair wear and tear or normal deterioration;
- (d) repairs necessitated by lack of routine or regular maintenance. Particular attention is drawn to the Owner's Manual and Service Handbook supplied with the caravan and any maintenance instructions or notices published from time to time by Bailey relating to the proper care and maintenance of vehicles; or
- (e) structural degradation or other damage caused by water ingress through non-permanently sealed seams or joints (such as, without limitation, around windows, hatches, doors and rooflights), beyond the initial 24 months of the Manufacturer's Warranty.

13 No liability will be accepted for:

- (a) damage caused by neglect or abuse, corrosion, intrusion of foreign or deleterious substances, lack of servicing, over-heating, freezing, or the continued use of the vehicle after a fault has become evident;
- (b) any loss or damage caused by parts not covered by this Warranty Cover, including soft furnishings or trim;
- (c) any accidental or fire damage or any losses incurred by accident or fire; or
- (d) transport costs to and from point of repair.

14 Bailey will only be liable for costs which are incurred as a direct consequence of the event, defect or fault leading to the claim being made under this warranty. No liability will be accepted for any other loss or damage (such as loss of income or revenue, or loss of business or profits), costs, expenses or other claims for compensation howsoever arising which was not reasonably foreseeable by both parties when the caravan was originally purchased. Bailey will not be liable for any loss or damage suffered by third parties, nor for bodily injury not caused by our negligence.

15. Nothing in this warranty shall limit in any way our liability: for death or personal injury caused by our negligence; for fraud or fraudulent misrepresentation; or for any matter for which it would be illegal for us to exclude, or attempt to exclude, our liability.

16. The purchaser has statutory rights in addition to this warranty and this warranty does not affect those statutory rights.

17. This warranty shall be governed by and construed in accordance with the laws of England and the parties irrevocably submit to the non-exclusive jurisdiction of the courts of England.

The name and address of the warranty and guarantee provider is: Bailey Caravans Limited, South Liberty Lane, Bristol, BS3 2SS

## 1.4 CARAVAN REGISTRATION AND IDENTIFICATION SCHEME (C.R.I.S)

This caravan has been security marked and recorded under the Caravan Registration and Identification Scheme that is organised by the Caravan Industry.

Shortly after purchasing this caravan you should receive your Touring Caravan Registration Document. It will be sent by post to your home address.

Your Touring Caravan Registration Document will include a 17 character V.I.N. (Vehicle Identification Number), shown in the top right hand corner. This 17 character V.I.N. will be die stamped into the caravan drawbar and chemically etched on up to a maximum of 10 eye level windows.

To protect yourself and your touring caravan, never leave the Registration Document in the caravan. For security reasons keep it in a safe place.


If you sell the caravan please follow the instructions on the Touring Caravan Registration Document.


If you do not receive a Touring Caravan Registration Document, lose it, or any of the details recorded are incorrect, please contact:


CRIS  
Dolphin House  
New Street  
Salisbury  
Wiltshire SP1 2TB  
Tel: 01722 411430

## 1.5 SAFETY

This handbook contains the information that you will require for safe enjoyment of your tourer. All of the information contained herein is important. However to draw your attention to specific items we have prefixed them with the following symbols to indicate a warning, caution or note respectively:

**Warnings**  are items that if ignored can cause the user(s) physical harm.

**Cautions**  are items that if ignored can result in the caravan becoming damaged.

**Notes**  are reminders that should be understood.



- ▲ To ensure all the occupants of your caravan enjoy a safe and relaxed environment please observe the following
- ▲ Ensure all occupants are aware of their escape routes in the event of a fire.
- ▲ Always keep escape routes and exit points clear from obstruction and debris.
- ▲ Provide one dry powder fire extinguisher of an approved type or complying with ISO 7165 of at least 1kg capacity by the main door, and a fire blanket next to the cooker. Familiarise yourself on your fire extinguisher and the local fire precaution arrangements.
- ▲ Ensure the caravan is serviced and maintained in accordance with this manual and the appliance manufacturer's recommendations. Also, that any replacement parts for an appliance conform to the appliance manufacturer's specifications and should be fitted by them or an authorised agent.
- ▲ Your tourer is a compact living environment, and appliances should be treated in the same way as those in the home to prevent any accidental burning scalding - keep young children away from hot surfaces.
- ▲ Your tourer is supplied with a EN1645 approved caravan step. Always take care when entering or exiting your tourer, ensuring that the step is securely located and safe before use. Do not use a broken or damaged step.
- ▲ The torque setting of the caravan's wheel bolts should be checked after the first 30 miles after collection of the caravan from the retailer. Thereafter, the wheel bolts should be checked before every journey. The torque settings and tightening sequence are detailed on page 2-10 of this handbook.
- ▲ Never attempt to lift the tow hitch with your hands when hitching the caravan to the tow vehicle or at any other time. Always raise or lower the tow hitch by winding the handle on the jockey wheel.
- ▲ Always ensure that the green button located on the leading edge of the coupling head is raised before towing.



## 2.1 INTRODUCTION

Choosing the right car and caravan combination for safe and stable towing is both an art and a science. It may seem complicated to the newcomer, but a few minutes spent understanding the basic principles, common terms and definitions in use will be worthwhile in ensuring your enjoyment of our product.

## 2.2 CARAVAN AND TOWING VEHICLE TERMS

**Maximum technically permissible laden mass:** As stated by the vehicle manufacturer. This mass takes into account specific operating conditions including factors such as the strength of materials, loading capacity of the tyres etc. It is the maximum that the caravan can weigh on the road.



- ▲ Under no circumstances should the maximum technically permissible laden mass of this caravan be exceeded.

**Mass in running order:** Mass of the caravan equipped to the manufacturer's standard specification and certain items of essential habitation equipment.

**User payload:** The difference between the maximum technically permissible laden mass and the mass in running order.

User Payload includes:-

*Personal effects:* Those items which a user can choose to carry in a caravan and certain items of habitation equipment which are not included in the Mass in Running Order or Optional Equipment.



- ▲ Personal effects will include the wheel lock, jack and television if supplied as standard with the caravan.

*Optional equipment:* Items made available by the manufacturer over and above the standard specification for the caravan.

The masses relevant to your model of caravan can be found in the service handbook.



- ▲ Please take care to ensure that you have allowed for the masses of all items you intend to carry in the caravan. E.g. optional equipment, essential habitation equipment and personal effects such as clothing, food, bicycles, sailboard, sports equipment etc. The actual laden mass of the caravan as towed should thus not exceed the maximum technically permissible laden mass. The actual laden mass can be measured on a public weighbridge.

**N.B.** Beware weighbridges although regularly checked can give varying (inaccurate) results.

**Nose Weight:** That part of the weight of the caravan supported by the rear of the towing vehicle. This is sometimes defined as the "static load at the coupling head". The maximum nose weight for a caravan will be limited by either the towing vehicle tow hitch limits or the maximum load to which the caravan hitch is specified.



- ▲ The towing vehicle and towing hitch handbooks/manufacturers must be consulted for their specification prior to towing.



- ▲ The maximum static nose weight for all Bailey caravans is 100Kg. This should never be exceeded regardless of whether the towing vehicle's upper limit is greater.

It is recommended that the nose weight should be varied to find the optimum for towing dependent upon the actual laden weight of the caravan. Experience has shown that the nose weight should be approximately 7% of the actual laden weight (i.e. between 50 and 100 kg).

### 2.2.1 Measurement of nose weight

Nose weight may be measured using a proprietary brand of nose weight indicator. Such equipment is obtainable from your Bailey Dealer.

Another simple method is to use bathroom scales and a suitable piece of strong timber as a platform to rest the tow hitch on. The timber can be placed vertically between the caravan tow hitch and the bathroom scales. The timber should be of such length that when the caravan tow hitch is lowered onto it, using the jockey wheel, the caravan floor is horizontal. The weight can then be measured. When taking the measurement the jockey wheel should be raised and the corner steadies lowered until they are just clear of the ground.

**Kerb Weight:** The weight of the towing vehicle as defined by the vehicle manufacturer.

This is normally: With a full tank of fuel

With an adequate supply of other liquids incidental to the vehicles propulsion

Without drivers or passengers

Without any load except loose tools and equipment with which the vehicle is normally provided

Without any towing bracket

### 2.2.2 The caravan to towing vehicle weight ratio

This can be determined by calculation and is equal to:

$$\frac{\text{actual laden mass of caravan}}{\text{kerb weight of towing vehicle}} \times 100\%$$

As a general guide.

- i. Conventional petrol engines with a capacity up to approximately 1600cc petrol or 1800cc diesel should be adequate for towing a caravan weighing around 85% of the kerb weight of the towing vehicle.
- ii. Above 1600cc petrol or 1800cc diesel such engines should manage a caravan weighing up to 100% of the kerb weight of the towing vehicle and still give adequate performance.

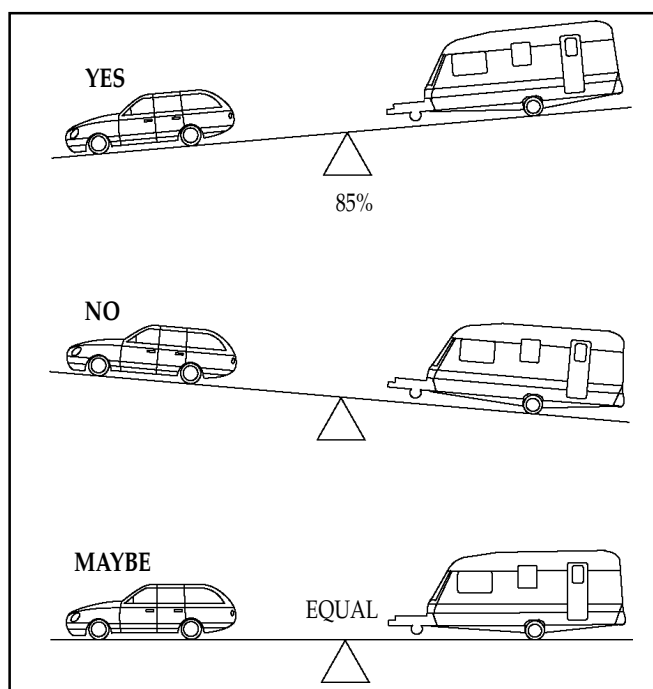
The towing vehicle manufacturer's towing limit is, in some cases, less than the kerb weight.

Vehicles with automatic transmission may need an oil cooler fitted or the SAE rating of the gearbox fluid increased when towing. The advice of the vehicle manufacturer should be sought.

The law requires that caravans & their towing vehicles & the loads they carry must be in such a condition that no danger or nuisance is caused. (Regulation 100 of the Road Vehicles [Construction and Use] Regulations 1986).

### 2.2.3 Towing vehicle's rear suspension

It is important that the towing vehicle's rear suspension is not deflected excessively by the noseweight on the tow ball. If it is excessive the steering and stability will be affected and at night the headlight beam is likely to dazzle other drivers which is illegal.



The greater the towing vehicle's tail overhang (the distance between the rear axle and the tow ball) the greater the effect the noseweight will have on the towing vehicle's rear suspension.

After trying out the caravan it may be found that stiffening of the rear suspension is necessary - but note that this may give the towing vehicle a firmer ride when not towing.

There are a number of suspension aids available and advice should be sought on which to use and how to fit.

It is important to ensure that the caravan is towed either level or slightly nose down. If it is not, then the car's towbar may be at the wrong height.



- ▲ Always consult your tow vehicle manufacturer for advice on towing and the loads that the vehicle is capable of towing.

## 2.2.4 Recommended tow ball height

The recommended tow ball height for Bailey Caravans is 415 +/- 35mm (i.e. between 380mm and 450mm).

## 2.2.5 Secondary braking cable (Break away device)

**Purpose** - To apply a trailer's brakes if it becomes separated from its towing vehicle. Having done this, the cable assembly is designed to part, allowing the trailer to come to a halt away from the towing vehicle.

**Construction** - A thin steel cable, coated in red plastic, and fitted with a means of attachment for connection to the towing vehicle.

**Operation** - In the event of the main coupling of the trailer separating from the towing vehicle, the cable should be able to pull tight, without any hindrance, engaging the trailer's brakes.



- ▲ The breakaway cable should never become taut during normal use.

### Correct procedure for use:

- Regularly check the cable and clip for damage. If in doubt, contact your trailer or towbar supplier or your service agent.
- Make sure the cable runs as straight as possible and goes through a cable guide underneath the trailer coupling.
- Determine whether or not the towbar has a designated attachment point (i.e. a part specifically designated by its manufacturer for a breakaway cable).

### Where a designated attachment point is provided on the towbar:

Pass the cable through the attachment point and clip it back on itself (Fig a).

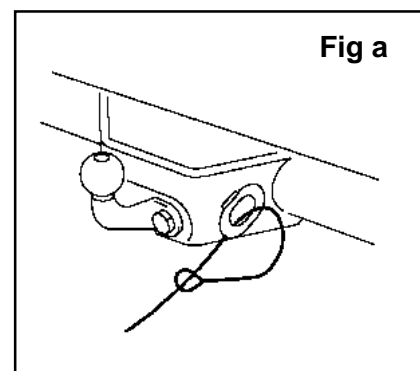
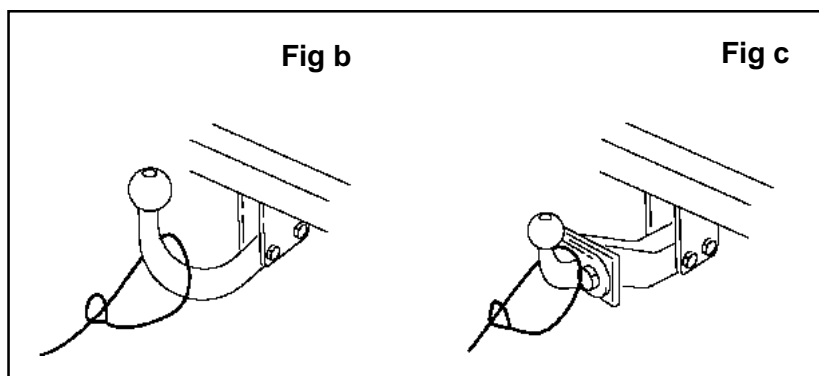


Fig a

**Where no designated attachment point has been provided on the towbar:**

**Fixed ball** - Loop the cable around the neck of the towball. If you fit the cable like this, use a single loop only. See Figs. b and c.

**Detachable ball** - You must seek guidance on procedure from the towbar manufacturer or supplier.



**Other means of attachment:**

In some instances it may be possible to attach the cable assembly:

*Either:*

a) to a permanent part of the towbar structure, as long as this meets the approval of the towbar manufacturer/supplier,

*Or:*

b) to an accessory sold for the specific purpose of breakaway cable attachment.

**When the breakaway cable is attached, check to ensure:**

a) that the cable cannot snag in use on the trailer coupling head, jockey wheel, or any accessory, e.g. a stabiliser, bumper shield, cycle carrier, etc.

b) that there is sufficient slack in the cable to allow the towing vehicle and trailer to articulate fully without the cable ever becoming taut and applying the brakes.



▲ For peace of mind you might wish to check the state of the cable by positioning the trailer and towing vehicle at extreme angles before setting off.

c) that it is not so slack that it can drag on the ground. If left loose, the cable may scrape along the ground and be weakened so that it subsequently fails to do its job. The cable may also be caught on an obstacle when in motion thus engaging the trailer brakes prematurely.

*Having followed this advice, should you feel that a satisfactory coupling arrangement cannot be achieved, consult your trailer or towbar supplier or service agent.*



▲ It is a legal requirement that the secondary break away cable is used when towing.

## 2.2.6 Loading and distribution of weight in the caravan and car

Equipment and personal effects should be loaded in the caravan so that any heavy items are low down near the floor and mainly over the axle(s).

The remainder should be distributed to give a suitable noseweight at the towing coupling (see illustration).

It should be noted that with certain layouts or models it may be necessary to load heavy items, such as awnings in the middle of the floor to achieve an acceptable and safe nose weight. It may not be possible to achieve the desired nose weight with all items stored 'out of sight' in lockers and bed boxes (bunks).



▲ Always load the caravan in such a way that maximises towing safety.

Incorrect caravan loading and/or overloading of the towing vehicles rear suspension will also result in poor towing stability.

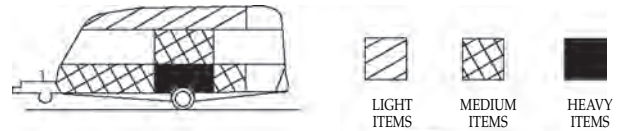
The weight should be distributed so that each side of the caravan carries, approximately, the same load.



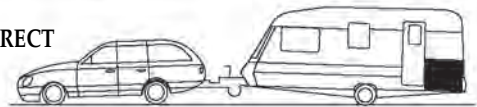
▲ Please take care that you have allowed for the weight of all items you intend to load into the caravan.

## 2.2.7 Noseweight

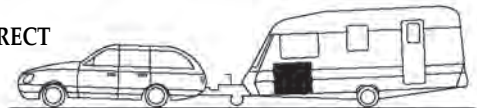
It is recommended that the noseweight should be varied to find the optimum for towing dependent upon the actual laden weight of the caravan. Experience has shown that the noseweight should be approximately 7% of the actual laden weight (i.e. between 50 and 100kg). However, this may be limited by the towing vehicle or caravan manufacturer's limit noseweight. Check with the car and caravan handbook, or consult your retailer. The upper limit for the caravan coupling head is 100kg.



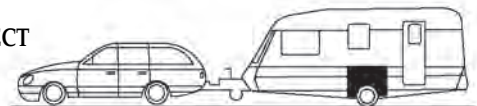
INCORRECT



INCORRECT



CORRECT



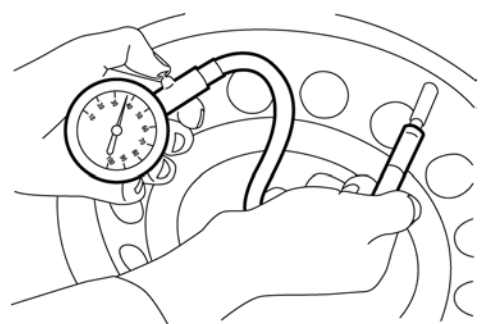
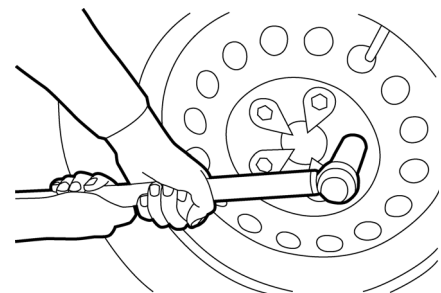
## 2.2.8 Hitching up

Before hitching up always check the following:

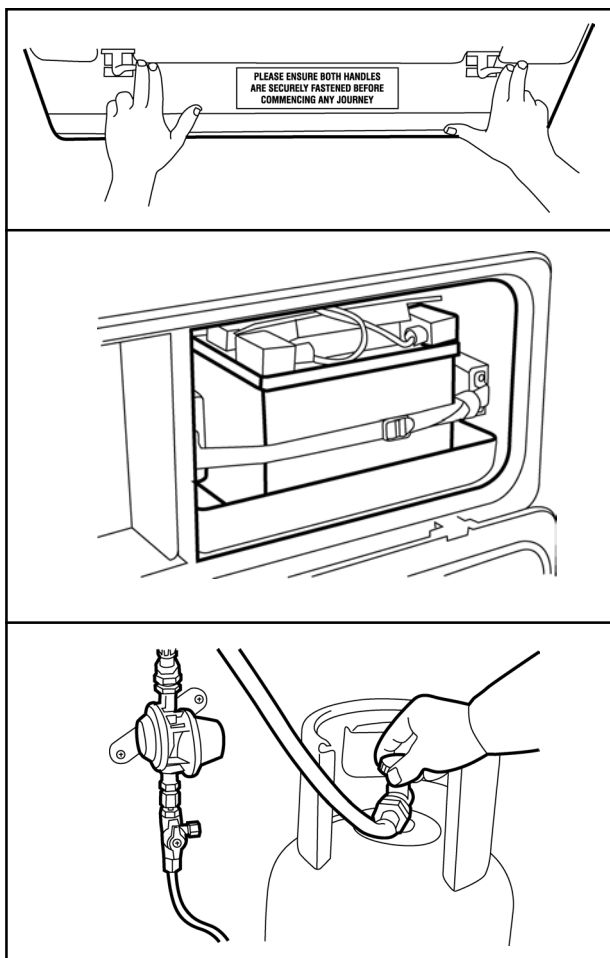
1. All wheel bolts are tightened to the correct torque. For the alloy wheels fitted to the Unicorn range the bolts should be tightened to a torque of 160Nm (Newton Metres) (118 lb-ft). For the steel spare wheel supplied with the caravan the wheel bolts should be tightened to a torque of 120Nm (88 lb-ft).
2. Inspect all wheels and tyres for signs of deterioration or damage.
3. Tyre pressures are correct according to the service handbook (remember to check the spare as well)
4. Ensure all loose articles are stowed securely



▲ Do not store heavy items in roof lockers. Televisions and other heavy items must always be secured at floor level when towing.



5. All lockers and cupboard doors are closed and secured
6. All bunks are secure
7. All rooflights, extractor fans and sunroofs are closed and secured
8. Tables are securely stored in their transit positions
9. Fridge is on 12v operation and door lock is set (if required)
10. All windows are fully closed and latched. Never tow with windows on night setting. Leave all curtains and blinds open to aid rear visibility
11. Gas cylinders are correctly positioned, secured and turned off, the gas box is shut and locked



- ▲ Ensure no loose items are stored in the gas box and it is not 'overstuffed' with equipment, as this may cause impact damage to the inside of the front panel.

12. Battery strap is connected and the battery is secure
13. All external doors, flaps and ventilation ducts are closed and secure with their relevant covers in place.



- ▲ Before commencing any journey always ensure that the Heki rooflight is closed and both handles are securely fastened.
- ▲ All gas appliances and the gas bottles must be turned off whilst towing
- ▲ It is recommended that a minimum of 2 people work together when hitching up the caravan to the tow vehicle.

### 2.2.9 Hitching the caravan to the tow vehicle

Ensure that the caravan is in a suitable position, and secure with the handbrake fully on.

Fully raise all four corner steadies.

Shut and lock the caravan exterior.

Gauge the height of the car's tow ball then raise or lower the height of the caravan's towing hitch to ensure that it is high enough to pass over it cleanly and not hit the tow ball. Rotating the caravans jockey wheel handle can do this. Clockwise to lower, Anti-clockwise to raise.

The assistant should position themselves by the front near side of the caravan so that they can extend an arm horizontally to indicate the position of the caravan's towing hitch.

Remove car's tow ball cover and keep it in a secure place in the car.

Slowly reverse the towing vehicle towards the caravan.



- ▲ When reversing the towing vehicle towards the caravan always ensure that any pedestrians and your assistant are visible at all times.

When reversing aim the tow ball of the car directly at the caravan towing hitch.

When the car's tow ball is as close to the caravan's towing hitch as possible fully apply the car's handbrake, turn off the engine and leave the car in first gear (Park or 'P' Position for Automatics).

The final positioning should be carried out by manoeuvring the caravan by hand.

Carefully release the caravan handbrake.

Manoeuvre the caravan by hand to position the caravan's tow hitch directly over the car's tow ball.



- ▲ Always manoeuvre the caravan by pushing /pulling on the grab handles only. Not the body panels. When the caravan is in the correct position fully apply the handbrake.

Raise the handle on the caravan tow hitch until it clicks and remains at an angle.

Rotate the jockey wheel handle clockwise to lower the caravan hitch onto the car's tow ball. When the tow hitch clicks and the handle drops to the horizontal position it is engaged. The hitch head is fitted with a visual indicator on the front radius to show whether or not it is properly connected to the tow ball. A green band will show immediately below the red indicator button on the hitch head when a proper connection has been made.

Connect secondary braking cable as per the instructions in the previous section.

Test that the hitch is now fully engaged by slightly raising caravan hitch from car tow ball by winding the jockey wheel handle anti-clockwise. The hitch should not release from the car tow ball. Only raise the rear of the car enough to check the hitch is fully engaged.

Turn jockey wheel winding handle to lower caravan. When the wheel is fully retracted, release the clamp and raise the jockey wheel to its travel position.

Once the jockey wheel is at its travel position and the wheel is located in the recess in the hitch cover tighten clamp again.

All caravans are fitted with a single 13 pin lead. Where the connector for the car does not match that of the caravan an adaptor or replacement cable will be required. Please ask your supplying retailer for more information.

Connect the lead to the receiving socket on the car ensuring there is enough loose cable for cornering, but not too much so that it can drag on the ground.

Check all car and caravan road lights are working and the operation of the brake lights.

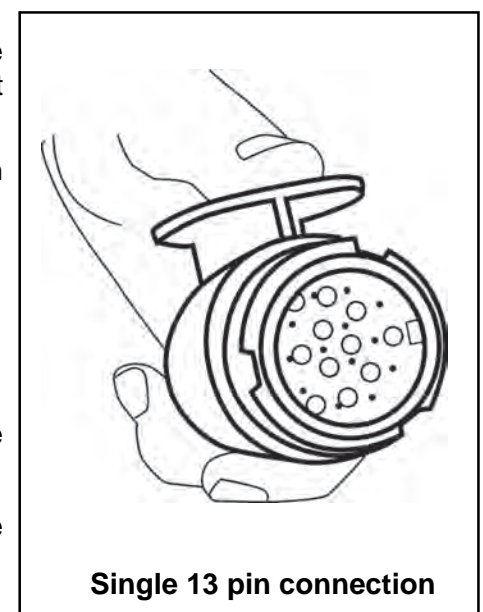
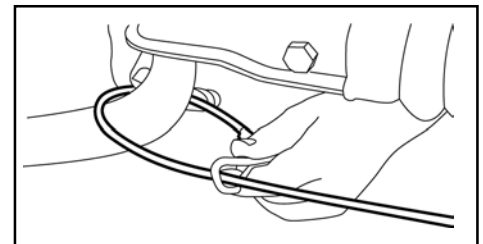
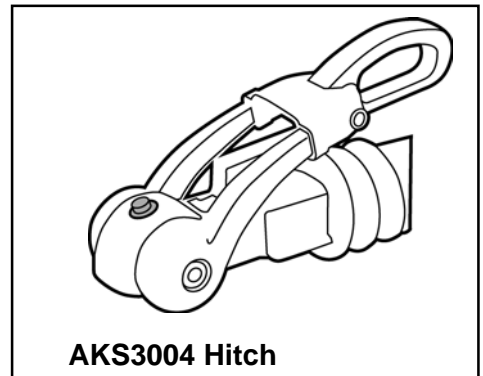
Pick up any levelling pads or levelling boards.

Check round the caravan for anything left behind.

Fully release the caravan's handbrake.

Carry out a second check that the hitch is secure and the secondary braking cable is connected.

Adjust all of the car's driving mirrors from driving seat to ensure good rear wards visibility.



## 2.3 TOWING

### 2.3.1 Speed limits

Where a lower limit is not in force, caravans may be towed at up to a maximum of 50 mph on single carriageways or 60 mph on dual carriageways and motorways.

### 2.3.2 Pulling away

Allow more engine speed to produce the power to move the additional weight of the caravan.

Let the clutch out smoothly.

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

Change gears smoothly.

Try not to jerk the clutch.

### 2.3.3 Caravan handling

Allow for the caravan being slightly wider than the car.

Allow additional distance from the kerb with caravan wheels so that they are not 'bumped'.

When passing other vehicles allow more than the normal clearance for driving solo.

Overtaking and stopping distances are increased when you are towing.

Always indicate in plenty of time before carrying out any manoeuvre.

Allow longer to accelerate up speed prior to overtaking.

Allow for the vehicle being twice its normal length.

Do not suddenly swing out.

Carry out all manoeuvres as smoothly as possible.

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

### 2.3.4 Reversing

Proficiency at reversing can only be achieved with practice and should be first attempted in a large open area. Consider taking a suitable training course.

### 2.3.5 Motorway driving

Caravans may not be towed in the outside lane of a three or four lane motorway. (Reg. 12(2) of the Motorway Traffic [England and Wales] Regulations 1982).

Reduce speed in high winds, cross winds, downhill or in poor visibility.

High sided vehicles such as lorries or coaches can cause air buffeting, so extra care must be taken when passing or being passed. Give as much space as is possible between your caravan and the high sided vehicle.

### 2.3.6 Mirrors

The Law requires the driver of the towing vehicle to have an adequate view to the rear.

If there is no rear view through the caravan windows it may be necessary to have additional exterior towing mirrors fitted to provide a view along both sides of the caravan. In some countries these additional mirrors are a legal requirement.

Any rear view mirror must not project more than 200mm outside...

- \* the width of the caravan when being towed
- \* the width of the towing vehicle when driven solo

Any additional rear view mirror fitted shall be of an approved European type and cover the field of view as stipulated by the regulations.

## 2.3.7 Passengers



▲ Passengers are forbidden to ride in a caravan at any time.

## 2.3.8 Snaking

This is a term used to denote an unstable car and caravan combination where the caravan 'weaves' from side to side often causing a similar swaying movement in the car itself. Possible causes are:

- i. Insufficient tyre pressures on either caravan or tow vehicle.
- ii. Tow vehicle too light or otherwise unsuitable.
- iii. Incorrect loading or weight distribution.
- iv. Excessive speed especially downhill.
- v. Side winds.
- vi. Overtaking.
- vii. Being overtaken by a high-sided vehicle.
- viii. Erratic driving.
- ix. Mixing radial and cross ply tyres.
- x. Nose of caravan is towing too high.
- xi. Insufficient noseweight.

For best stability aim at an 85% ratio of weights (see page 2-2).

## 2.3.9 Stabilisers

A stabiliser should never be used to try to improve a caravan/towing vehicle combination that has poor stability as instability may appear at higher speed.

However, a good stabiliser can make an acceptable caravan/towing vehicle combination more comfortable and easier to handle.



▲ Holes should not be drilled in either the coupling head or 'A' Frame members without prior consultation with the chassis manufacturers.

If you do find your outfit snaking, try to keep the steering wheel in a central position as far as possible, slow down gently and avoid braking if possible.

### 2.3.10 Road lighting

All caravans are fitted with a single 13 pin lead. Where the connector for the car does not match that of the caravan an adaptor or replacement cable will be required. Please ask your supplying retailer for more information.

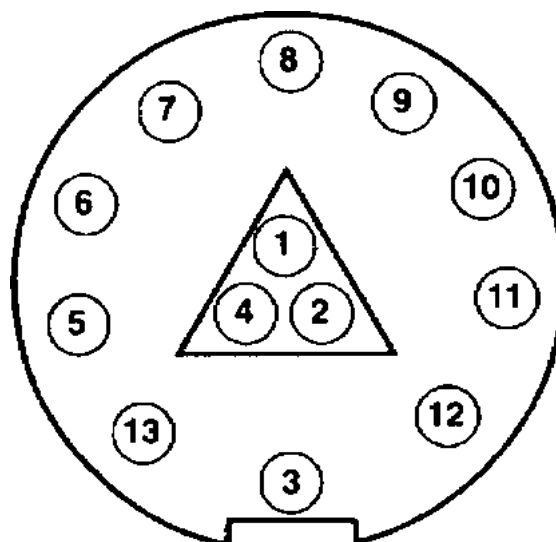


- ▲ Condensation can occur in the LED grab handle lights but will dissipate with no loss of performance or damage to lights.

### 2.3.11 Types of tyres fitted

The tyres fitted by Bailey Caravans are suitable for towing at sustained speeds of up to 81 mph (130 kph) to allow for use in countries which permit this speed.

Radial and cross ply tyres should never be mixed. It is dangerous and can cause snaking. Fit only tyres that are of the identical specification on each side.



#### KEY:

- |   |  |
|---|--|
| 1 Left-hand direction - indicator light   | 7 Left-hand rear position and marker lights, and rear registration-plate illumination device |
| 2 Rear fog light  | 8 Reversing light  |
| 3 Common return for core Nos. 1, 2 and 4 to 8   | 9 Continuous power supply  |
| 4 Right-hand direction indicator light  | 10 Power supply controlled by ignition switch  |
| 5 Right-hand rear position and marker lights, and rear registration-plate illumination device | 11 Return for core No. 10  |
| 6 Stop lights   | 12 Coding for coupled trailer  |
|   | 13 Return for core No. 9   |

#### 13 pin connector

### 2.3.12 Tyre Wear and Damage

The legal requirements for tread depth (1.6mm) on motor vehicles apply also to caravans.

In order to equalise wear it is suggested that wheels be balanced and changed around from time to time. When caravans are not in use for extended periods, wheels and tyres should be removed and stored in dry conditions and away from the outside elements. Alternatively caravans should be jacked up to relieve the load from the tyres.

It is dangerous to neglect tyre damage. Should you detect a blister, rupture or cut exposing the casing, or if it has suffered a violent impact (for example against a kerb), such that there is a risk of internal damage, it is advisable to have it examined by a tyre specialist as soon as possible.



- ▲ The caravan industry recommends that, for safety reasons tyres more than 7 years old from the date of manufacture be replaced, but preferably replaced at 4 years old. The tyres may have deteriorated by this time, regardless of tread depth.

The cleaning of tyres should only be carried out using soap and water. Petrol, diesel, paraffin and other solvents are not suitable.

If the caravan is not used for long periods of time (winter months) it is recommended that the wheels/tyres are removed and stored at normal inflation pressure in a cool, dry place protected from direct sunlight, sources of heat, ozone concentrations and fuel/oil contamination. They can be covered with a natural material (e.g. Hessian) for protection but not plastic materials. This will reduce the deterioration of the tyres and reduce cracking and flat spots caused by continuous loading and external conditions.

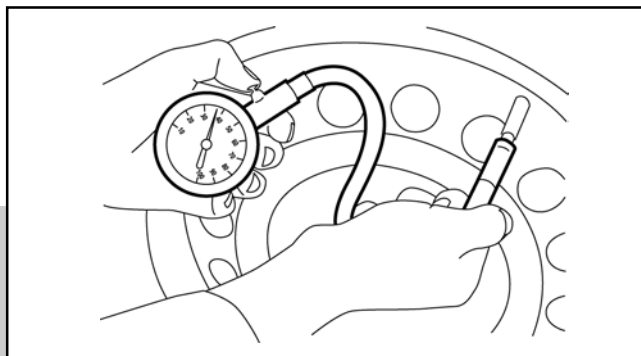
If it is not practical to remove the wheels it is recommended to routinely rotate the wheels to reduce the potential of cracking, flat spots etc.



- ▲ Check with your insurance company that you are still covered when wheels are removed.

## 2.3.13 Tyre pressures

Caravan tyres should be at the pressure recommended in the Service Handbook, pages 8-10. The towing vehicle tyres must be at the pressures recommended for towing or heavy loading. Towing stability may otherwise be affected. Check all pressures only when tyres are cold.



- ▲ Always check your caravan and tow vehicle tyre pressures when cold and prior to any journey. Also check tyre condition for blisters, ruptures or cuts exposing the casing and any damage to the wheel (violent impact / kerb damage) before/after any journey. (Inclusive of spare). If in doubt it is advisable to have it examined by a tyre specialist as soon as possible. Incorrect tyre pressures can seriously effect towed vehicle performance and the longevity of the tyre.

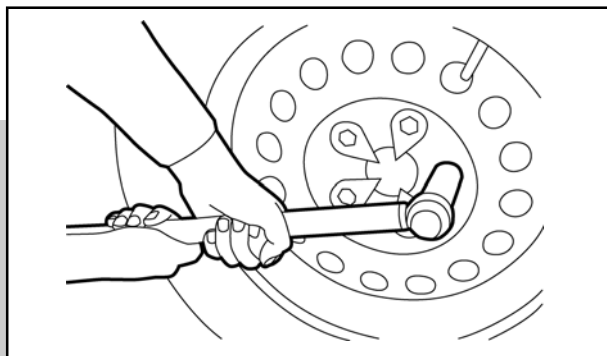
Consult your tow vehicle manufacture for the correct tow vehicle tyre pressures for towing.

## 2.3.14 Wheels

Caravan wheel bolts must always only be tightened to the appropriate setting by tightening each opposite fixing in succession to the correct torque. Always use a calibrated torque wrench. Do not use a corner steady brace, power or electric wrench. It is as dangerous to overtighten wheel bolts as it is to not tighten them sufficiently.



- ▲ The torque settings should be checked after the first 50 km/30 miles (see page 4-50). For *alloy wheels* the wheel bolts should be tightened to a torque of *160Nm* (Newton Metres) (118 lb-ft), for *steel wheels* the wheel bolts should be tightened to a torque of *120Nm* (88 lb-ft).



The condition of wheels should be checked regularly particularly for distortion of flanges and the wheel dish. Wheels damaged or distorted, or having the wheel bolt seating cracked or deformed must not be repaired.

If a wheel or tyre has to be changed it should be of the same type of construction and size as originally fitted.



- ▲ Only use a spare wheel and tyre recommended by Bailey Caravans, which should be of the same specification as those fitted to the caravan.
- ▲ Always ensure mating surfaces and bolt seating areas are clean and dry. Wheel bolts should never be lubricated.

### 2.3.15 Spare Wheels

Unicorn models are fitted with an ALKO spare wheel carrier together with a wheel and tyre as standard equipment. This is located just behind the caravan axle underneath the caravan.

To remove the spare wheel and tyre first extract the split pin on the end of the securing chain, completely remove the large black plastic nut that hold the assembly onto the chassis member. Lift the curved ends of the carrier out of the chassis member and lower the carrier to the ground. The carrier assembly can then slide out so that the tyre is clear of the chassis member and from there the nut securing the wheel to the carrier frame can be undone and the spare wheel and tyre removed. In some instances it may be necessary to raise the caravan using a jack to make it easier to remove the spare wheel from the carrier.

We strongly recommend that you familiarise yourself with this assembly and its operation.



- ▲ Alloy wheel bolts used on a steel spare wheel should be torqued to the same settings.



- ▲ Always ensure that the spare wheel carrier's black plastic nut is fully tightened and the split pin in place before towing.
- ▲ Always ensure that the sparewheel and tyre is secure before towing.

### 2.3.16 Changing a Wheel

- Always ensure that the tow vehicle and caravan are in a safe position before attempting to change the caravan's wheel. We recommend leaving the caravan hitched to the tow vehicle when changing the caravan's wheel. The tow vehicle should be left in gear (or 'P'/Park for an automatic) with the handbrake on both the car and caravan fully applied.
- Lower the corner steadies as a safety measure to stabilise the caravan. Chock the un-punctured wheel on the opposite side of the caravan to prevent any movement.
- Slacken off the wheel bolts by no more than one quarter of a turn on the wheel that requires changing. Do not fully undo them.
- Place the jack plate under the axle tube as near as possible to the main longitudinal member. Where AL-KO Jack Brackets are fitted only use either an AL-KO Side Lift or Scissor Jack.
- Jack up the caravan until the wheel for removal is just off the ground.
- Remove the wheel nuts and remove the wheel.
- Fit the spare wheel, then reverse the above procedure. Ensure that the wheel bolts are all fitted, and tightened in the correct sequence to the right torque (see page 2-11 for tightening sequence and torque setting).
- Remember to tighten all bolts to the correct torque and re-check after 50kms/30 miles.



- ▲ Under no circumstances should the corner steadies be used as a jack they are only a means of stabilising the caravan.

## 2.3.17 Unhitching

Do not pitch in a position in which your outfit will obstruct other people.

Try to choose an area that is dry, reasonably level and preferably with a hard base.

If you have no alternative but to pitch on a slope ensure that, for when you leave, you are facing down the slope.

It is good practice to chock the wheels of the caravan when parked on a slope even though the caravan brakes are applied.

Fully apply the caravan handbrake.

Unclamp and lower the jockey wheel to the ground.

Re-clamp it in this position. Operate the button on the hitch head and move the handle forward to release the mechanism. Operate the jockey wheel handle until the coupling head is clear of the towing ball.



- ▲ Serious damage will occur unless the button is depressed first and the handle lifted forward before the caravan is lifted manually. This prevents the noseweight being transmitted through the button.

Re-clamp jockey wheel if necessary.

Disconnect the secondary braking cable.

Disconnect the 13 pin plug and return it to its holder.

Replace towball cover.

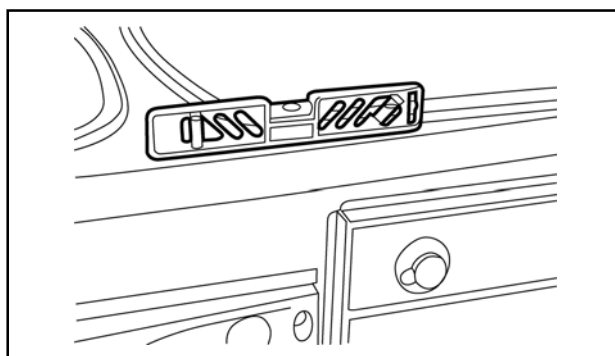
Park your vehicle alongside the caravan on the offside.

## 2.3.18 Levelling the caravan

Levelling must be carried out in both directions in order for the refrigerator and other equipment to function correctly.

The positioning of the jockey wheel can be used to help level the caravan.

Lower the corner steadies until they are in firm contact with the ground.



- ▲ Under no circumstances should the corner steadies be used as a jack as they are only a means of stabilising the caravan.

Levelling pads or boards should be used under the steadies where the ground is soft or uneven.



- ▲ In extreme cases where it is necessary to raise a wheel off the ground for levelling purposes, further adequate support should be applied under the wheel so that the corner steadies do not take any undue strain.

## 2.3.19 Towing brackets

All tow cars registered since 1 August 1998 must be fitted with a European type-approved towing bracket, by law. It is recommended that other cars not affected by this law use only towing brackets designed and tested to British Standard BS (AU) 114b, or ISO 3853.

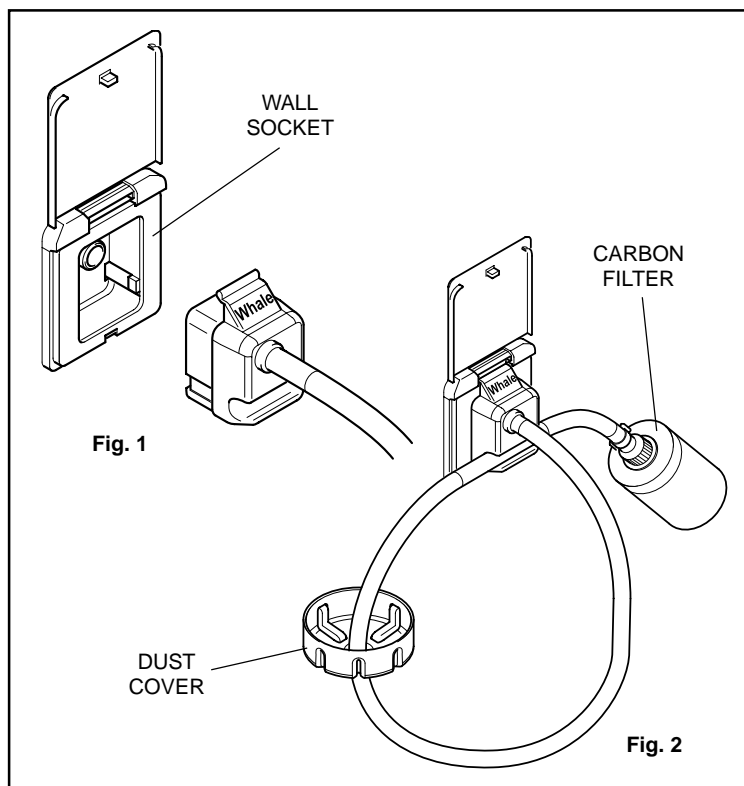
### 2.3.20 Driving licences

A driver passing a test after 1 January 1997 is restricted to a car/caravan combination not exceeding 3500kg maximum laden weight, and where the maximum loaded weight of the caravan does not exceed the unladen weight of the car. New drivers outside these rules will need to take an additional driving test. Existing drivers who passed a test before 1 January 1997 are not affected.

## 3.1 THE WATER SYSTEM

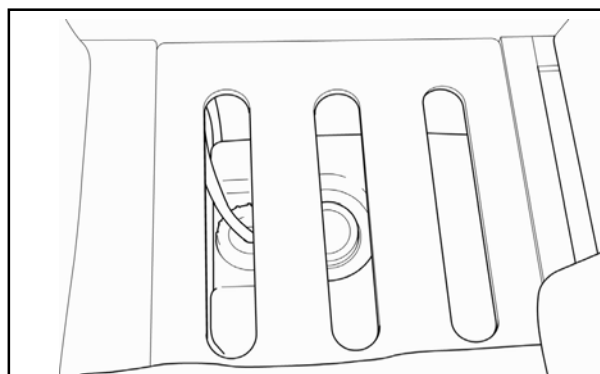
### 3.1.1 Priming the System using the External Water Container

1. Adjust dust cover over water container opening (please note dust cover should not be secured to water container as air must be allowed to enter container to replace water being drawn out).
2. Open one cold tap (e.g. kitchen sink).
3. Place carbon filter assembled to hose, into a full water container.
4. Insert plug into wall socket and close lid to lock plug in place (see fig. 1).
5. Switch on 12 volt supply at main control panel located by the exterior door.
6. Water will flow from the open tap expelling any trapped air in a few seconds. The water may at first be greyish in colour which is quite normal, the discolouration is due to harmless media being flushed out of the new filter cartridge.
7. Close cold tap and open hot tap to expel any remaining air in the water heater (this may take up to 30 seconds). Then repeat this exercise with the remaining taps in the caravan.
8. The system is now ready for use. Hose can be inserted into plug groove (fig. 2) to keep filter off the ground while refilling water container. Keep socket lid shut at all times when plug is removed.
9. When the caravan is left unattended or water supply has been allowed to empty to prevent the pump running continuously, turn off at isolating switch.
10. Care should be taken when turning on any of the hot taps after the water heater has been switched on as steam can spurt from the tap whilst the hot water system is filling.

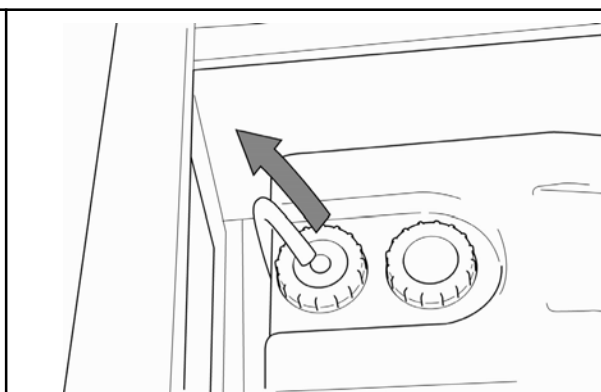


### 3.1.2 Supplementary Water Tank

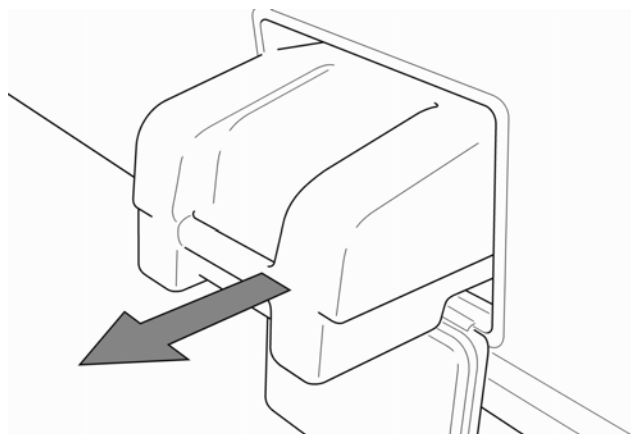
#### Operation



**Fig. 1** Remove offside front bunk cushion and slatted board to access tank from inside the caravan.



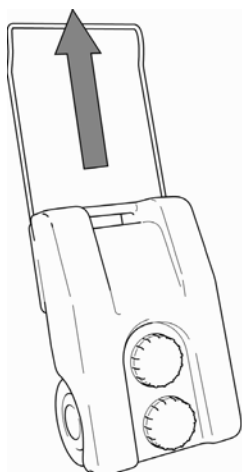
**Fig. 2** Remove connection pipe.



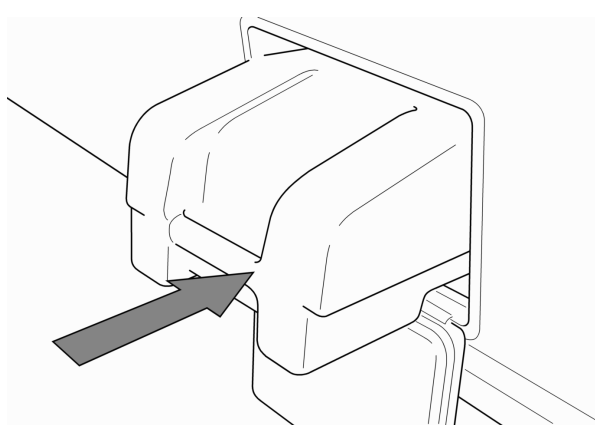
**Fig. 3** Open external door and remove tank from outside the caravan.



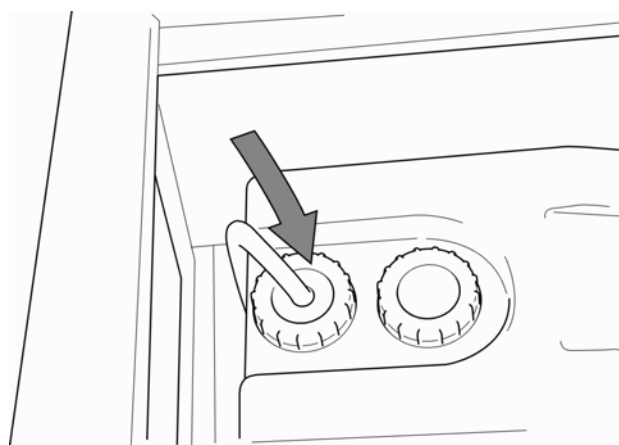
**Fig. 4** Swap caps to prevent water spillage in transit.



**Fig. 5** Open handle and wheel to water supply. Remove blank cap and fill.



**Fig. 6** Carefully lift tank and re-locate in dedicated storage position.



**Fig. 7** Swap caps and refit pipe. Then turn 3-way tap handle located under front offside bed box to correct position for operation.



- ▲ The tank is intended to supplement an external water source or as an alternative in very cold weather. The external water source cannot be used to fill the tank.

## 3.1.3 Troubleshooting

FAULT	CAUSE	SOLUTION
<b>Pump doesn't run</b>	No power to pump	Check power supply Attach leads/clean connections
	Fuse has blown	Replace fuse do not exceed recommended fuse size.
	Blockage in pipework	Check pipework for kinks.
<b>Pump runs but no water appears</b>	No water getting to pump	Check water tank is not empty. Check filter is not blocked.  Remove each valve lever, tighten the nut located below the valve lever and replace the lever.  Check all connections from tank to inlet of pump are secure, any air leaks will prevent prime. To test for air leaks hold showerhead underwater and operate pump. If air bubbles are visible coming from the showerhead an air leak is present.
	Water leaking at outlet side of pump	Check pipework/fittings for leaks and repair. Check system drain plugs are closed.
<b>Pump runs but will not switch off</b>	Water leaking at outlet side of pump	Check pipework/fittings for leaks and repair. Check system drain plugs are closed.
	No water	Check water supply level. Check and replace filter if clogged.
<b>Pump cycles on and off periodically when all the taps are closed. (Normal with partially opened tap)</b>	Water leaking at outlet side of pump	Check pipework/fittings for leaks and repair. Check system drain plugs are closed.
<b>Pump cycles on and off excessively when tap/s are open</b>	Excessive back pressure	Check pipework for kinks and filters etc., are clear. Check shower rose/taps for blockages and repair.
<b>Noisy operation</b>	Pump drawing air	See cause 'No water getting to the pump'.
	Noise created by vibration	Check pump is secured to solid surface. Check pump body is clear of hard surfaces. Locate away from interfering surfaces. Check pipework is securely supported.
<b>Low flow</b>	Bore of pipework/connections too small	Check for kinks in pipework. Check pipework is not blocked.
	Power supply to the pump	Check battery is not discharged.
	Pipework/connections crushed due to overtightened jubilee clips	Replace damaged connections.
	Water leaking at outlet side of pump	Check pipework/fittings for leaks and repair. Check system drain plugs are closed.
	Pump internal filter clogged (if present)	Remove fitting connected to pump inlet, using point nosed pliers remove cylindrical filter mesh from inside pump inlet. Clean and refit filter and plumbing.

### 3.1.4 Routine Maintenance

- Ensure the hose adapter 'O' ring and the socket in the housing are kept free from dirt.
- Use only silicone or water based lubricant to inlet nipple 'O' rings on socket for lubrication.
- Drain system thoroughly during the winter months, (see separate winterisation instructions).
- Service inlet socket annually, (use Whale's AK8834 service kit containing all serviceable parts).
- Replace the WF3000 water filter annually.

### 3.1.5 Cleaning Containers and the System

- Cleaning instructions for both water containers and the water system are detailed in general maintenance section of the handbook.

### 3.1.6 Aquasource Direct Mains Water Connection

(This is not included as standard equipment, but is available from your nearest Bailey retailer).

- The Aquasource fits simply and securely to your Whale socket system.
- Comes with 7.5m of foodgrade layflat hose, which is compact for storage. (A further 7.5m extension hose is available as an optional extra to extend the hose).
- The system is pressure controlled to protect your caravan from sustaining damage to your water system (plumbing connections should be checked at the beginning of every season for frost damage or loose connections).



- ▲ When using an Aquasource system, do not sleep or leave the vehicle unattended without turning off the water source.

### 3.1.7 Draining and Winterisation of the Water System

Caravans may be in use all year round, but when not in use, even for short periods, this procedure should be followed. One night of freezing temperatures is all that is required for expensive, permanent damage to water system components.

- Open all taps, shower controls and shower rose on/off controls, lift ceramic ball mixer tap levers in central position to allow both the hot and cold water to drain.
- For Aquasmart system open valves and run pump to drain system.
- Remove shower heads
  - a) To remove shower heads, unscrew by hand, then shake out and store in a dry place.)
- The submersible filter should be shaken out and stored in a dry place.
- Open drain plug on water heater.



- ▲ It is essential that the lever of ceramic ball mixer taps is fully raised and in the central position. Failure to do this will not allow both the hot and cold water system to fully drain and will result in frost damage.

## 3.1.8 Setting up the Water System

- Refit old filters:
  - a) Check all plumbing connections.
  - b) It is recommended at this point to sterilise your water container and flush the system through with a sterilising fluid.
- Renew old filter after flushing system through. It is also recommended that the water system is checked during annual service.



▲ Frost damage cannot be claimed under warranty.

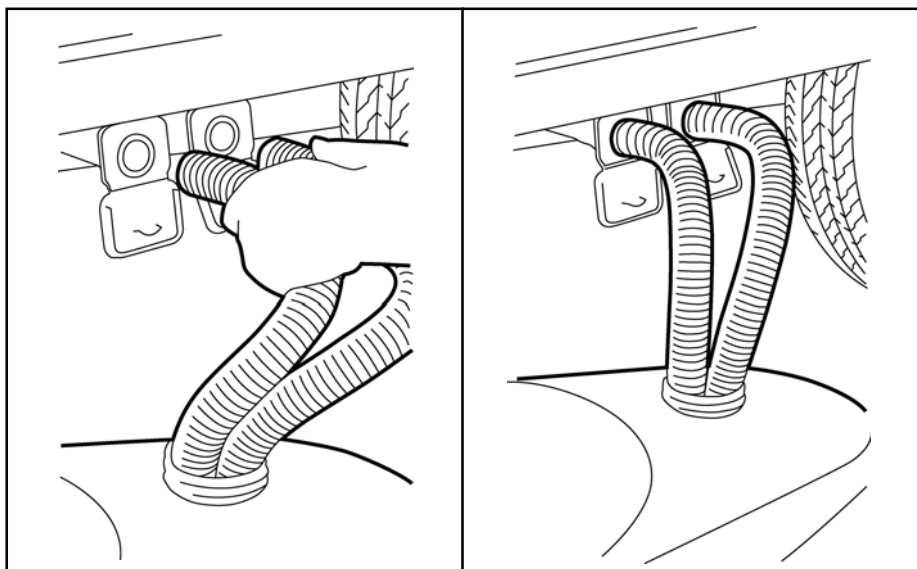
## 3.1.9 Shower tray

The shower tray cannot be expected to drain fully, some residual water may remain which will require "mopping up".

## 3.1.10 Waste (Grey) Water System

The waste water (often referred to as 'grey' water) from the caravan's sinks and shower tray are routed to two outlets just behind the offside wheel.

When setting up your caravan short pieces of waste pipe hose should be fitted to the wastewater outlets to direct the water into a suitable container. These are both available from your caravan retailer.



▲ Ensure that the exit ends of the waste water pipes, that direct the waste water into the holding container, cannot be submerged by the waste water in the holding container at any time.

Upon arrival at the caravan site advice should always be sought from the site manager as to where waste (Grey) water is to be disposed of.

## 3.2 THE GAS SYSTEM

All gas appliances fitted to your Bailey caravan are suitable for operation on both Butane and Propane without the need for adjustment.

### 3.2.1 General information

**Gas Cylinders:** Bottled Liquid Petroleum Gas (LPG) is the most convenient portable source of fuel for your caravan.

Cylinders are available in the following sizes:

Calor Gas = 3.9kg, 4.5kg, 6kg & 7kg.

BP Gaslight = 5kg & 10kg.

All sizes will fit into your gas box.



- ▲ Never allow modifications of the electrical or Liquid Petroleum Gas systems and appliances except by qualified persons.
- ▲ Never use portable cooking or heating equipment, other than electric heaters that are not direct radiant type, as it is a fire and asphyxiation hazard.

### 3.2.2 Types of gas

#### ● Butane

Butane is supplied in the UK in Green or Blue bottles.

Continental bottles usually have a male left hand thread similar to but not identical with UK Butane.

Butane is suitable for use at temperatures down to 2°C but will not work below that temperature.

#### ● Propane

Propane is supplied in red, or partly red bottles that have a female left hand threaded connector.

Scandinavian countries use the same connector.

Germany or Austria supply Propane with a male connection.

Propane will work at temperatures as low as -40°C and is therefore suitable for all winter caravanning.

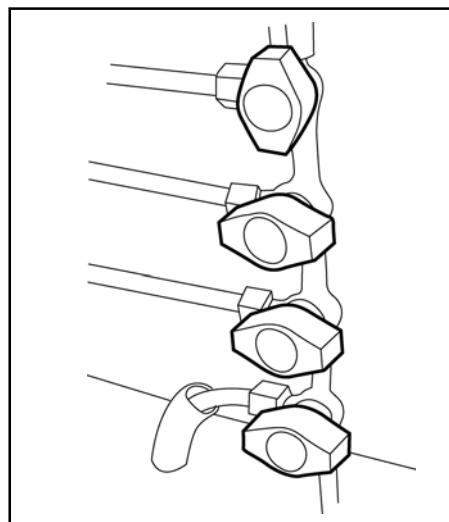
Make sure that heating, cooking appliances and gas cylinders are switched off before you move the caravan.

All gas appliances in your tourer can have their gas supply individually isolated by turning off the relevant tap. The tap is either located on the centrally positioned gas manifold or directly beside the appliance.

Regularly check flexible gas hose, joints and connections for tightness.

Finally make sure that each gas appliance is working efficiently to the recommendations of the appliance manufacturers.

The regulator is a governing device which adapts the bottle pressure to one that suits the equipment in the caravan.



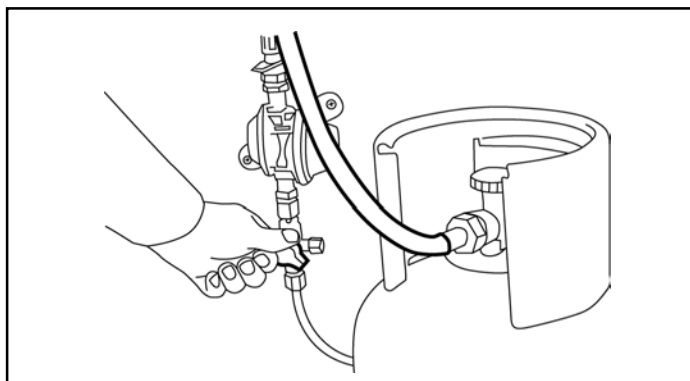


- ▲ Some industrial LPG appliances operate at high pressure and require a 'high pressure' regulator. This often has an adjusting handle on it. Never use such a regulator on a caravan.

Propane and Butane gas regulators are not interchangeable.

- Always ensure that the gas system is inspected/maintained every 12 months.
- In the event of a fire ensure all occupants evacuate the caravan via the nearest escape route.
- If it is safe to do so turn off the yellow isolating valve located in the gas box directly below the regulator.
- If you suspect a gas leak then immediately turn off the supply of gas at the yellow isolation tap located below the regulator in the gas box. Then turn off the gas valve on the gas bottles. When this has been completed the system must be inspected by a competent person.
- Never use gas bottles located outside the caravan gas box. Do not use any gas extension hoses.
- Gas barbecue - always use gas appliances that are suitable for use at 30mbar.

Your caravan is fitted with a regulator as standard equipment. This is located in the caravan gas box mounted on the front bulkhead of the caravan between the gas bottles. The gas regulator has a working pressure of 30mbar and is suitable for both propane and butane liquefied petroleum gas. There are dedicated hoses available for different types of gas/bottle. They are also available for camping gas and other mainland Europe LPG Suppliers. Please contact your Retailer who will have a stock of these hoses.



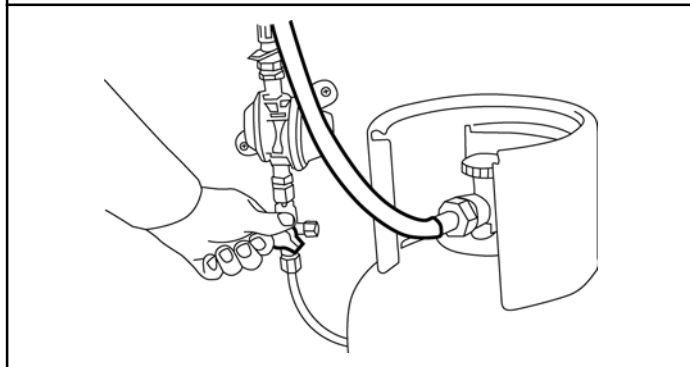
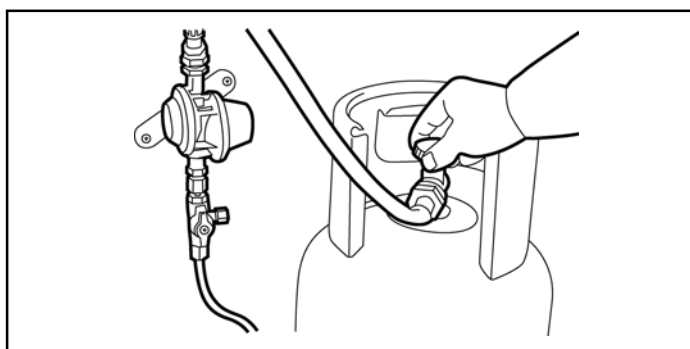
## 3.2.3 Changing Gas Cylinders

Ensure that the cylinder is empty, then:

- Turn off the tap located by the gas regulator.
- Turn off cylinder valve and all gas appliances
- Remove the gas hose regulator from the cylinder.
- Release retaining strap
- Remove cylinder from gas locker and stand on ground.
- Fit plastic protecting cap to cylinder

With the full cylinder:

- Before placing cylinder in the cradle ensure that the tray is clean and free from any debris. Cleaning should be carried out only with warm soapy water.
- Place cylinder in cradle in gas locker.
- Remove plastic protector from cylinder



- Connect the gas hose.
- Connect retaining strap
- Turn on cylinder valve and then systematically relight appliances as required

### 3.2.4 Gas safety advice

LPG is not poisonous.

There is a danger if all air and oxygen were excluded. (Ventilation holes must be kept clear at all times and must not be obstructed).

The manufacturers have given LPG a smell in order to identify leaks.

### 3.2.5 Awning Space LPG Appliance Exhaust

There is no danger of pollution within an enclosed awning space from the exhaust of an LPG burning refrigerator that vents into it.

### 3.2.6 Gas Leaks

If a smell of gas becomes apparent, the supply should be turned off at the cylinder immediately.

Extinguish naked lights including cigarettes and pipes. Do not operate electrical switches. Open all doors and windows to disperse any gas escape.

Butane/Propane gas is heavier than air, any escaping gas will therefore collect at a low level. The strong unpleasant smell of gas will enable the general area of the leak to be detected. Check that the gas is not escaping from an unlit appliance. Never check for leaks with a naked flame, leak investigation should be carried out using a leak detector spray or soapy solution.

Do not operate any electrical apparatus whatsoever, especially light switches.

If the leak is not obvious, the caravan should be evacuated and a competent service engineer consulted.

Avoid naked lights when connecting or changing a cylinder. Ensure the gas valve is turned off.

Regularly inspect the flexible gas hoses for deterioration and renew as necessary with approved type (all hoses should be replaced before the expiry date marked on the hose or after a maximum of five years).

Remember the gas is heavier than air and therefore sinks to the lowest point.

Keep gas bottle containers outside (and protected against frost). If they must be kept inside make sure they are well away from heat.

### 3.2.7 Ventilation

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

There is no danger when adequate ventilation is provided.



▲ Under no circumstances should the caravan's ventilation be blocked or obstructed in any way

High level ventilation is via the roof lights. The low level ventilation is via the vents in the floor at the front of the caravan living area directly behind the front bulkhead. With multiberth layouts the rear

sleeping compartments have their own low level ventilation. Please consult your caravan retailer for its location.

The mesh screens fitted should be kept free of obstructions by dust, leaves, insects etc. Inspect regularly and use a brush and soapy water as necessary. It may be necessary to remove the weather shield located on the underside of the floor of the caravan to gain access for cleaning.

All roof-mounted flue installations should be inspected once a year throughout their length for corrosion. Flues should be replaced if any sign of perforation is found. Ensure that the replacement is of an approved type. Check that the external roof seal is seating correctly and the locknut is fully tightened.



- ▲ Do not make any additional openings in the floor.
- ▲ Never use portable cooking or heating equipment, other than electric heaters that are not of the direct radiant type in your caravan, as it is a fire and asphyxiation hazard.

Appliances such as cookers with naked flames should never be used for room heating.

No appliance shall be used inside when being connected to the external BBQ socket.



- ▲ It is recommended that any elevating roofs be raised when the leisure accommodation vehicle is used for habitation purposes.

## 3.2.8 Gas BBQ point



- ▲ The external gas BBQ point should be used as a connection outlet only and should not, as a matter of safety be used as a gas inlet.

### 3.3 THE ELECTRICAL SYSTEM – 230 VOLT

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

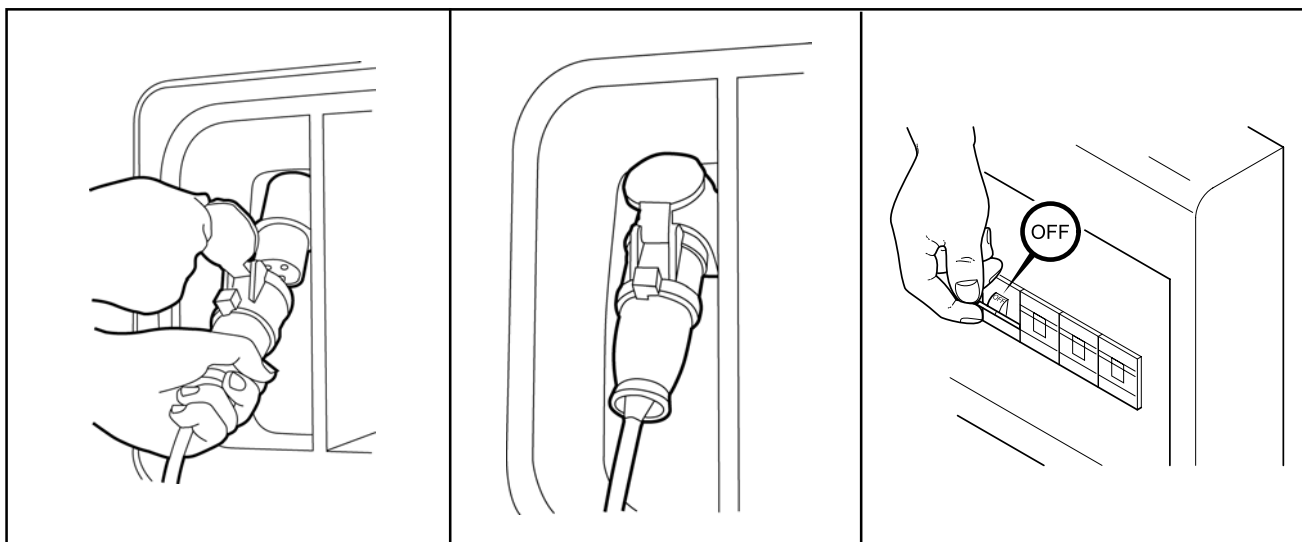
Your attention is drawn to the following notice as laid down by the Institute of Electrical Engineers.

Instructions for electricity supply - low voltage (230 v)

#### 3.3.1 On arrival at caravan site



- ▲ Before connecting the caravan installation to the main supply:
  - ▲ Check that the mains supply is suitable for your installation and appliances, i.e. whether it is a.c. or d.c. and whether it is at the correct voltage, frequency and polarity.
  - ▲ Check that your installations will be properly earthed. Never accept a supply from a socket outlet or plug having only two pins, or from a lighting outlet.
  - ▲ Check that any residual current device (earth leakage circuit breaker) in the mains supply to the caravan has been tested within the last month. After connection to site supply, test again.
- Make sure that the switch at the site supply point is off.
  - Make sure that the caravan RCD unit is switched off.
  - Remove any cover from the electricity inlet provided on the caravan, and insert the connector of the supply flexible cable.
  - Remove any cover from the socket outlet provided at the site supply point, and connect the plug at the other end of the supply flexible cable to this. Switch on the main switch at the site supply point.
  - Switch on the caravan RCD unit.



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

### 3.3.2 On leaving caravan site

- first switch off the site supply.
- switch off the caravan RCD unit.
- then disconnect the pitch lead.

In case of difficulty consult an approved electrical installation contractor (who may be the local electricity board). It is dangerous to attempt modifications and additions yourself.



▲ Lampholder-plugs (bayonet-cap adapters) should not in any circumstances be used.

- replace the cover of the socket outlet at the site supply point. It is dangerous to leave the supply socket or supply flexible cable live.

Every 12 months, the caravan electrical installation should be inspected and tested and a report on its condition obtained as prescribed in the Regulations for Electrical Installations, published by the Institute of Electrical Engineers.

### 3.3.3 Generators

- Switch off all appliances, the miniature circuit breakers and the residual current device.
- Start the generator and allow to run for a few minutes to stabilise.
- Connect the caravan to the generator.
- Switch on 16 amp miniature circuit breaker.
- Switch on the residual current device.
- Switch on the fridge (230 volt phase) or plug in a 230v light to one of the 13amp sockets. This is to provide a load on the generator and help remove any "spikes" in the supply which can damage the charger unit.
- Switch on the 5amp miniature circuit breaker and any other appliances you require.



▲ It is always advisable to have at least one other mains appliance switched on with the charger unit to minimise the chance of damage to it.



▲ Do not connect the 12 volt output of the generator to the battery terminals. The AC ripple must not exceed 10%.

### 3.3.4 Overseas connections



▲ Connection to a mains voltage supply overseas requires particular attention.

Care must be taken when connecting supplies abroad since the supplies can be of reverse polarity.

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

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

A means of checking the polarity of the mains supply when overseas is useful.

There are available several proprietary makes of equipment for the purpose (e.g. Martindale tester unit).

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

Check all caravan equipment is set-up to accept the site supply before actually switching on.

### 3.3.5 Mains unit

The mains unit replaces the conventional fusebox. Similar, but larger units are often fitted in newer houses.

The unit gives overload and earth leakage protection for the 230v electrical supply in your caravan.

For normal operation all switches on the unit need to be in the ON position. The switches on the left of the unit are known as M.C.B.'s (miniature circuit breakers).

These take the place of the conventional fuse but are more convenient.

In the event of a fault the M.C.B. 'trips' i.e. automatically moves to the OFF position.

After elimination of the fault the M.C.B. can be re-set by switching to the ON position. (Against the spring pressure in an upwards direction).

If an earth fault develops or a person was to touch a live piece of equipment the leakage of current to earth should immediately operate the RCD (residual current device) and 'trip' the main switch, to the OFF position.

This switch is only re-settable after elimination of the fault.

To re-set, operate the switch as for M.C.B's.

Every time you connect to a site supply the RCD should be checked by operating the test button marked 'T'. The unit should immediately switch to the OFF position. If the unit does not switch off then a qualified electrician should be consulted.

If the unit does switch off, the test is complete and the switch can be reset restoring the supply back to normal.



- ▲ Having too many appliances switched on at the same time will trip the MCB. This is a safety measure.



- ▲ It is essential that connections are made exactly as shown. If terminal markings are not in accordance with the diagram they must be ignored. If in doubt consult a qualified electrician.
- ▲ Always disconnect the electrical connector between the towing vehicle and the caravan before connecting a 230v supply to the caravan and before charging the caravan battery by any other means.

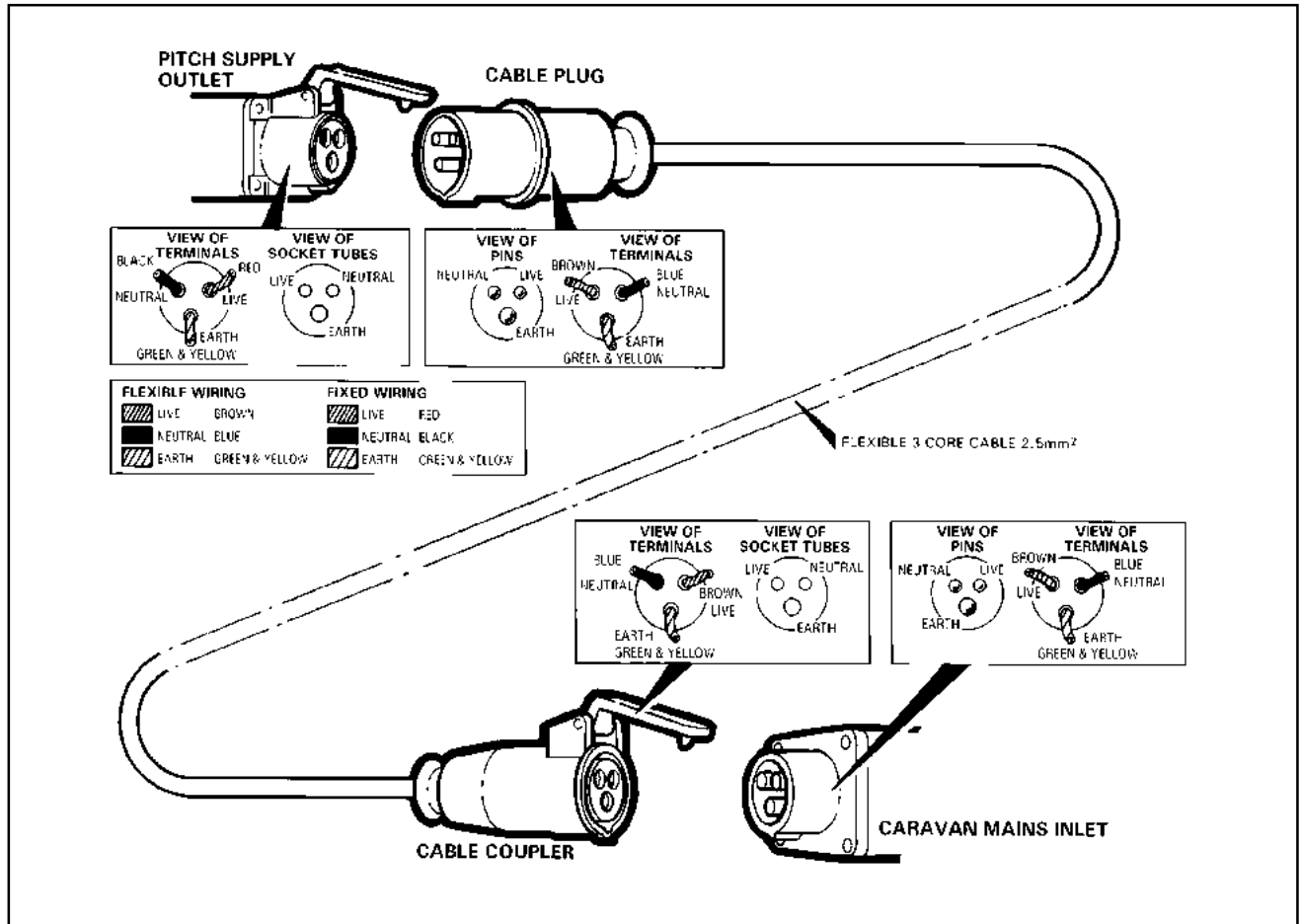
It is possible that all of the 230v mains electrical equipment may not be able to be operated simultaneously. A typical UK caravan park mains hook up point provides a maximum output of 16 amps and on some continental sites the available output may be as low as 5 amps. If your loading exceeds the site supply it may trip the parks circuit breaker. Please check the available mains output with your site operator.

The following items need to be added together if used simultaneously.

230V Mains equipment typical consumption figures:

Fridge .....	0.5 amps	Colour TV .....	2.5 amps
Charger .....	1.0 amps	Microwave .....	10 amps
Water heater .....	3.75 amps	Air conditioning .....	4 amps
Hydronic heating system .....	3.15 amps		

## 3.4 THE ELECTRICAL SYSTEM – 12 VOLT



Your caravan is fitted with a 12 volt charger as standard. This converts the 230 volt AC supply into 12 volt DC. This enables the 12 volt equipment in the caravan to function and charges the caravan leisure battery. A fully charged caravan leisure battery should read 13.8 volts on the voltmeter mounted in the control panel.

The charger is capable of charging leisure batteries and will not overcharge.

The 12 volt system is designed to operate with a leisure battery in circuit and should not be turned on without one connected. The 12 volt supply to the caravan services can be isolated via the 12 volt on/off switch on the control panel.

### 3.4.1 12-volt Control Panel

The system is fitted with an automatic relay to select the power source. When the car is connected via lead the car power will be used. When the car is not connected the battery and or the power supply will be used to power the caravan.

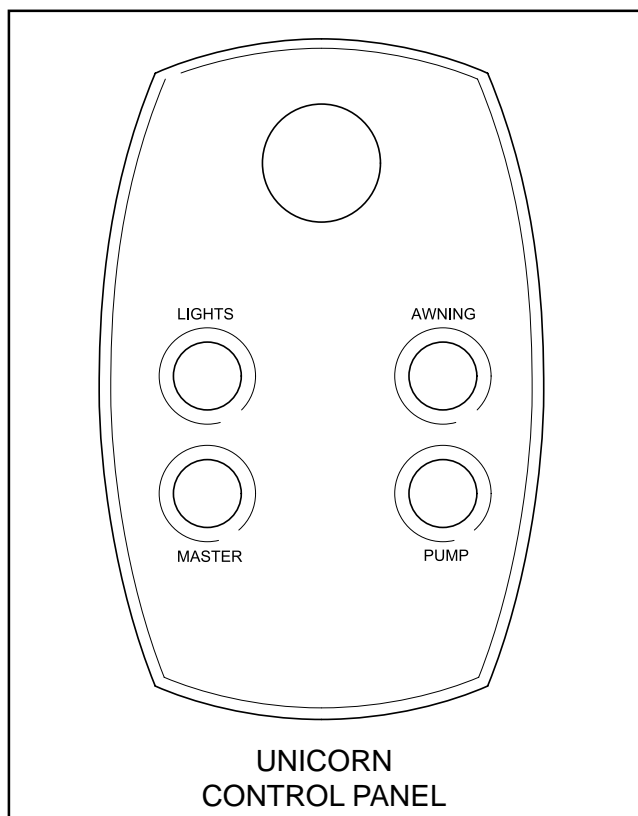
The control panel is fitted with a master 12-volt switch; this enables you to isolate the 12-volt supply in the caravan.

The control panel controls the operation of various 12V equipment

- Indicated charge level of the caravan battery (a good battery should indicate 13.8 volts)
- Water pumping light, is only activated when the pump is running
- All models have light isolation and awning switches fitted into the control panel.



- ▲ The appearance of the control panel may vary, but the functions are the same.



The 12-volt electrical system fuses are located in the caravan bed box. It has 14 fuses each having identification to their particular use. If a fuse is to be replaced it must be with one of the same rating as that removed.

### 3.4.2 Auxiliary Battery storage/mains inlet

The battery and 230V mains inlet are located in a special locker mounted in the side of the caravan. The door frame has a cable recess allowing the door to be locked when the mains cable is connected.

This locker will accommodate a battery up to 110 amperes/hours capacity.



- ▲ The battery must be placed in the tray provided in the battery storage compartment, and must be used at all times.

A battery of not less than 40-50 amperes/hours capacity is recommended, crocodile clips should never be used to connect the battery, terminals should be shrouded. Always switch off all appliances and lamps before disconnecting the auxiliary battery.

The battery should be secured to prevent movement when towing.

Metal objects should not be stored in the battery box.

Where a 12V extension is used between the towcar and caravan, this should not exceed 5 metres in length - minimum cable size 2.5mm to minimise voltage drop.

DIY modifications/additions to the wiring systems are not recommended, always consult your Dealer who will be pleased to carry out such work.

Do not continuously charge the battery when caravan is not in use.



- ▲ Switch off all appliances before disconnecting battery.



- ▲ Negative connections should always be disconnected first and reconnected last.

- ▲ Car type battery chargers are not suitable for charging a leisure battery and may damage it.



- ▲ When not using your caravan always ensure that the fridge control knob is turned to the 'off' position. Failure to do this will result in a flat battery due to 12V power drain from the fridge circuit relays.



## 4.1 ALDE WATER HEATING SYSTEM

### Operating Instructions

Please read these instructions carefully before using the boiler. These instructions are approved for The Alde Compact 3010 boiler fitted in caravans, motor caravans and buildings in accordance with CE no. EMC e5 02 0138, 845 BP-0003. Installation and repairs may only be carried out by a professional. National regulations must be adhered to.

#### 4.1.1 Boiler Design

The boiler consists of three eccentrically-fitted cylinders (heat exchanger, water jacket for the heating system and, outermost, water jacket for hot water). The two outer pipes, and their ends and connections, are made of stainless steel, while the heat exchanger is made of aluminium. The heat exchanger is divided into two semi-circles. The burner is located in the upper half, being the combustion chamber, and the combustion gases are expelled through the lower half. The burner unit is fitted on the end of the heat exchanger. It consists of a combustion fan, burner, solenoid valve and intake/exhaust connections. Two heating cartridges are fitted to the water jacket of the heating system. Maximum output is 2 or 3 kW, depending on model.

#### 4.1.2 Description of Functions

##### Using LPG

When LPG operation is selected on the control panel, the combustion fan starts. When the fan speed is correct, it signals the circuit board that the boiler can be lit. The circuit board sends ignition sparks to the spark plug at the same time as it sends electricity to the solenoid valve, which opens to allow gas in. The burner ignites, and a sensor transmits a signal back to the circuit board that the boiler is lit, and the ignition spark stops. The burner keeps burning until the boiler thermostat or the room thermostat reaches the set temperature reading. Should the boiler go out for any reason, the sensor is activated and a new attempt is made to start the boiler (in about 10 seconds).

##### Using the heating cartridge

Electrical operation is selected on the control panel, the 12-volt relays on the circuit board trip, allowing the 230 volt supply to reach the electrical elements. The heating cartridge is controlled in the same way as the gas boiler.

##### Warm water

When only warm water is required, for example during the summer, no settings need to be made, the boiler will look after this function automatically.

The pump will only start when the temperature in the vehicle is lower than the set temperature (see item 4, Control Panel).

If the vehicle temperature is higher, the pump will not start.

### Important Information



- ▲ The boiler must not be started if there is no glycol in the system.
- ▲ The LPG boiler and heating cartridge may be operated in parallel.
- ▲ The heating system may be heated up without the warm water heater being filled with fresh water.
- ▲ Always switch off the main isolator for the boiler when the vehicle is not being used.
- ▲ Always drain the warm water heater of fresh water if there is a risk of frost.
- ▲ The LPG boiler must not be operated when refuelling the vehicle.
- ▲ When washing the vehicle, take care not to get water in the roof vent.

### 4.1.3 The Domestic Hot Water Heater

The boiler is fitted with a built-in warm water heater with a volume of approx. 8.5-litres fresh water. The warm water heater can produce around 12 litres of 40°C water per half-hour (at a cold water temperature of 10°C). If the heating cartridges are used instead of gas for heating the boiler, the capacity is slightly reduced. Always rinse out the heater before it is used, particularly if it has not been in operation for some time.



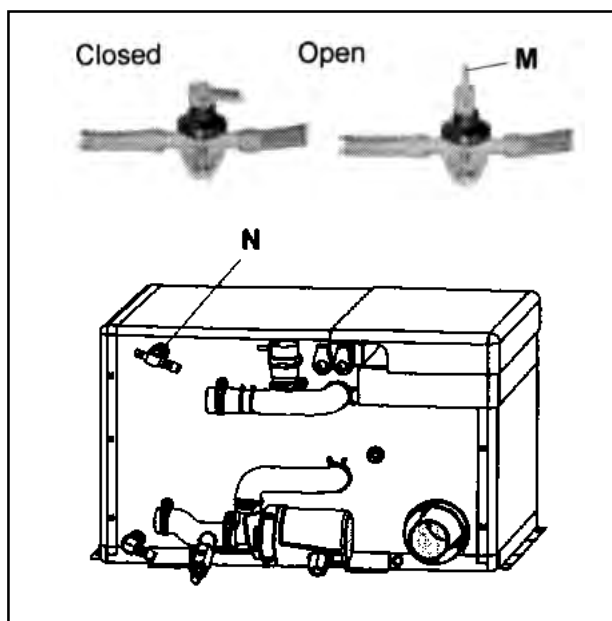
- ▲ The hot water is not intended for drinking or cooking. When the heater is in continuous use, it should be emptied approx. once a month, to ensure that a new air cushion is formed in the heater. The air cushion is essential for absorbing pressure surges in the heater. For emptying specially-adapted boilers, as well as any other freshwater systems in the vehicle, please refer to the manufacturer's instructions.
- ▲ The warm water heater should always be drained of fresh water when there is a risk of frost and when the caravan is not in use. The warranty does not cover frost damage.

#### Draining the heater using the combined safety/drain valve:

1. Switch off the freshwater pump
2. Open all water taps.
3. Then open the safety/drain valve by raising the yellow lever (M) to a vertical position.
4. The heater will now drain directly below the vehicle through the safety/ drain valve hose. Check that all the water is emptied out (about 7-10 litres). Leave the valve in the open position until the next time the heater is used.



- ▲ Check that the automatic check valve (N) is open and is allowing air to enter the heater when it is being drained, and that the hose (O) is not blocked.



### 4.1.4 The Heating Cartridges

All Compact 3010s are fitted with two 230 V heating cartridges with a maximum output of either 2100 or 3150 W. Select the heating cartridge output on the control panel. Always check that the input fuse of the vehicle has the correct amperage in relation to the selected output. Note these ratings are for the boiler only. 1050 W requires a 6 amp fuse. 2100 W requires a 10 amp fuse. 3150 W requires a 16 amp fuse.

### 4.1.5 The Circulation Pump

A circulation pump is required to circulate the heated glycol fluid. A 12 V circulation pump is fitted in the expansion tank. An optional 230V circulation pump can be fitted on the boiler. Selection of circulation pump is made with a switch on the control panel. The room thermostat on the control panel controls the circulation pump, i.e. switches it on or off according to the amount of heat required.

### 4.1.6 System Temperature

The boiler is set to a system temperature of 80°C, i.e. the temperature of the glycol fluid as it circulates in the heating system.

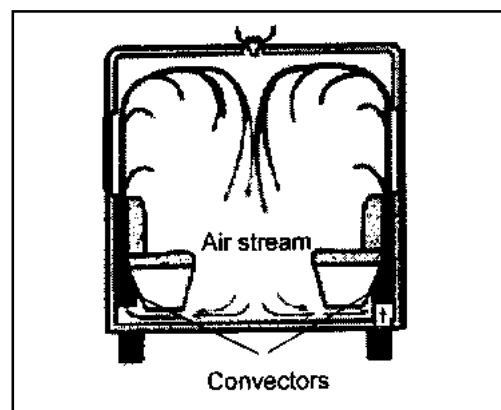
### 4.1.7 Air Circulation

In order to achieve the best possible result from the principle of connected heat, it is important to allow air to circulate freely under bunks, and behind backrests and wall-mounted cabinets. If the vehicle has a fitted carpet, ensure that the carpet does not obstruct the air supply to the radiators. It is just as important that cushions or blankets do not interrupt the flow of air behind backrests and wall cabinets.

### 4.1.8 Maintaining the Heating system

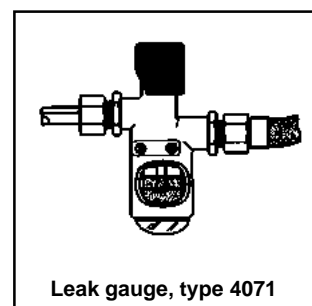
#### Wintercamping

While camping during the winter, ensure that the flue is kept clear of snow and ice, since the inlet air to the LPG boiler enters through the flue. Do not start the LPG boiler until the flue is completely free of snow. A flue extension (part no. 3000 320) for fitting on the roof is recommended for winter camping.



#### The LPG system

The LPG system should be checked regularly by a professional, who will ensure that there are no leaks from connections or hoses. LPG hoses should be changed according to national regulations, maximum of five years. Check the date stamp on the hose. Hose has a propensity to dry out and crack. To increase safety, we recommend fitting an Alde leak gauge, type 4071, as close as possible to the pressure reduction valve.



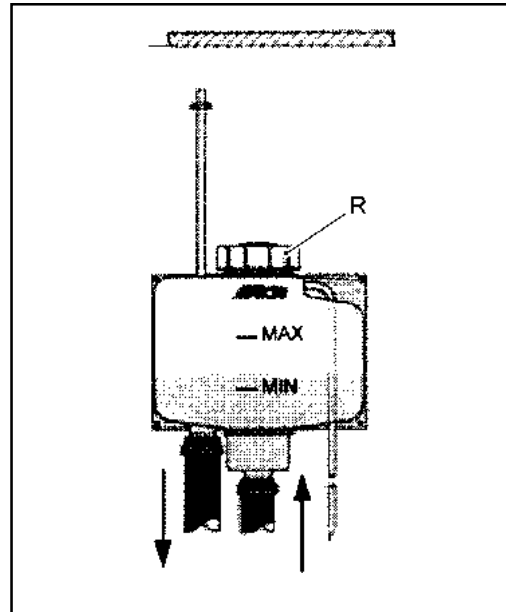
#### The heating system

Regularly check the heating system's fluid level in the expansion tank. The level should be about 1cm above the minimum indicator in a cold tank. The heating system should be filled with a mixture of water and glycol. For preference, use high quality readymixed glycol (with inhibitor) intended for use in aluminium heating systems. If using concentrated glycol, the mixture should consist of 60% water and 40% glycol. If the heating system will be exposed to temperatures below -25°C, the glycol content must be increased, but not to more than 50%. Any vessels used for the liquid must be spotlessly clean, and the pipes in the heating system must be free of contamination. This will prevent the growth of bacteria in the system. The glycol mixture should be changed every second year, since its ability to protect against corrosion, for example, will deteriorate. The glycol content should be checked before topping up with new liquid. This will ensure that the concentration of glycol in the mixture is not too high. If the fluid level in the expansion tank falls for reasons other than evaporation, please check all joints, drain cocks and bleeder screws to ensure that they are not leaking. If the glycol-water mixture leaks out, rinse with water and wipe up. Never allow the heating system to stand empty of glycol.

#### 4.1.9 Filling the System With Glycol Fluid



- ▲ For manual filling, unfasten the expansion tank nut (R) and slowly pour the glycol mixture into the tank. Bleed the system and top up with more liquid if the level has fallen after bleeding. Bleed a newly-filled system regularly during the first days the heating system is in operation.



#### 4.1.10 Bleeding the System

Depending on how the pipes have been fitted, air pockets may form when the system is filled with glycol fluid. A sign that there is air trapped in the system is that the heat released into the pipes only extends a metre or so from the boiler even though the circulation pump is operating. In newly-filled systems, small air bubbles can form in the expansion tank, creating a murmuring sound. If the circulation pump is stopped for a few seconds, the bubbles will disappear.

##### **Bleeding:**

If a bleeder screw is fitted to the outgoing pipe, open this bleeder screw and leave it open until it starts to discharge water. If the boiler is fitted with an automatic bleeder, there is no need to bleed it manually. Start the LPG boiler. The circulation pump should be switched off.

Open the remaining bleeder screws in the system (please refer to the instruction manual of the vehicle for their locations). Leave the bleeder screws open until they start discharging fluid, and then close them. Start the circulation pump and let it run for a while. Check that the pipes and radiators around the vehicle are heating up.

##### **If they still fail to heat up, try the following:**

Single-axle caravan: Stop the circulation pump. Lower the front of the caravan as far as possible. Leave it in this position for a few minutes to allow the air to travel upwards in the system. Open the bleeder screw at the highest point. Leave it open until it discharges glycol fluid. Raise the front of the caravan as far as possible and repeat the procedure in this position. Then position the caravan horizontally and start the circulation pump. Check that the pipes and radiators around the vehicle are heating up.

Motor caravan or twin-axle caravan: The easiest way to bleed the heating system is to place the vehicle on a sloping surface or to raise one end of the vehicle using a jack. Bleed the system as described above.

#### 4.1.11 Fault Finding

##### **The boiler does not start**

1. No LPG? Incorrect type for conditions?
2. Is the main tap fully open?
3. If the boiler has not been operated for some time, or if the gas cylinder has been changed, it may take longer than normal to light the boiler.
4. Check that the boiler is connected to the electricity supply ( $> 11\text{ V}$ ).
5. Check that the fuse (T) for the boiler is intact.
6. Check whether the electric connections on the boiler are securely in position.

If none of the above helps, contact a service workshop.

##### **The heating cartridge is not working**

1. Check that there is an electricity supply (230 V) to the heating cartridge.
2. Check that the relays fitted to the boiler come on (a slight click can be heard from the relays when the heating cartridge is switched on at the control panel).

If none of the above helps, contact a service workshop.

### 4.1.12 Control Panel - Functions and Symbols

(Applies to control panels with programme version 38 (06-17) or later, see item 17)

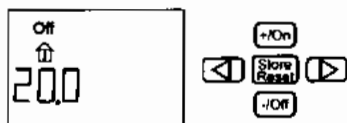
#### 0. The standby and on-position of the control panel

In standby, the functions which are activated in the boiler are shown, and there is no background lighting in the display. The control panel automatically goes to standby from the on position after two minutes if no buttons are pushed or if you step to standby (left of On/Off) with the arrow keys.

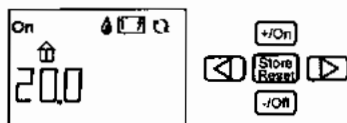
Start the on position by pressing any button.

The background lighting comes on (blue light) and a function that can be set flashes. Select a function that can be set with the arrow keys. The settings are automatically saved.

- 1 The control panel is on standby and the heater is switched off.



- 2 The control panel is on standby and the heater is operating.

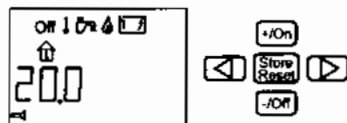


#### 1. Resetting the system

- 1 Press the Store/Reset button for 10 seconds. The control panel is reset to the factory setting.



- 2 The main breaker to the control panel is in the "Off" position, Gas is on, Electricity at 1kW and 22°C.



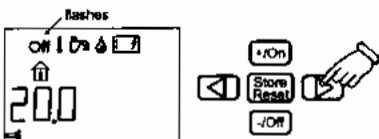
The pump is in automatic position. The lower menu row is not lit up.

#### 2. Start the heater

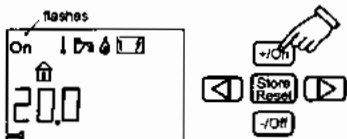
Start the heating in the caravan with the settings last used.

If you break the power to the heater, the settings which were last used will automatically be used when the power comes back on.

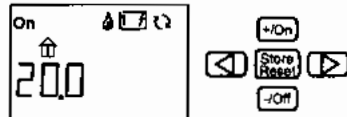
- 1 Press the button with the arrow until "Off" (main breaker) in the display flashes.



- 2 Press the +/On button. "On" (main breaker) in the display flashes.

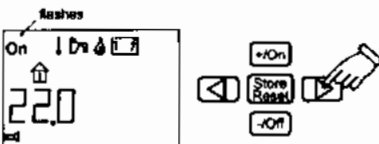


- 3 The settings are ready. "On" (main breaker) is shown in the display when the panel returns to standby.

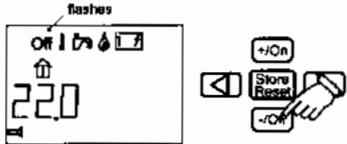


#### 3. Switch off the heater

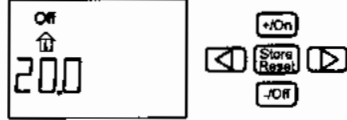
- 1 Press the button with the arrow until "On" (main breaker) in the display flashes.



- 2 Press the -/Off button. "Off" (main breaker) in the display flashes.



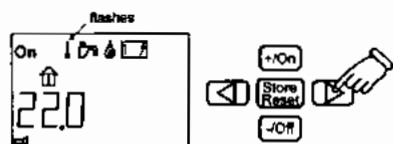
- 3 The settings are ready. "Off" (main breaker) is shown in the display when the panel returns to standby.



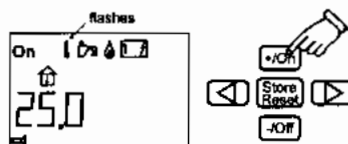
#### 4. Set the temperature you want in the vehicle

The temperature of the vehicle can be set from +5°C to +30°C at intervals of 0.5°C.

- 1 Press the button with the arrow until the symbol for selecting temperature flashes. The temperature shown is the temperature which is set at present (in this case 22.0°C).



- 2 Increase the temperature by pressing the +/On button. Lower the temperature by pressing the -/Off button. The diagram shows that we have set the temperature at 25.0°C.



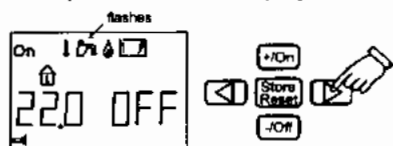
- 3 The settings are complete and the boiler is working at the set temperature.

#### 5. Warm water

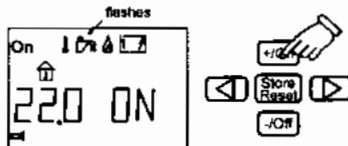
If you need more warm water you can increase the quantity temporarily for 30 minutes by increasing the water temperature from 50°C to 65°C.

When 30 minutes have elapsed, the water temperature returns to 50°C and the symbol goes out. When you have selected more warm water, the circulation pump stops.

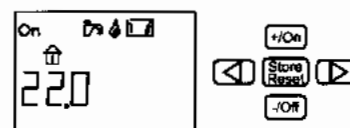
- 1 Press the button with the arrow until the symbol for selecting warm water flashes. The "OFF" text is shown next to the temperature on the display.



- 2 Switch the warm water on by pressing the +/ON button. The "ON" text is shown next to the temperature on the display.

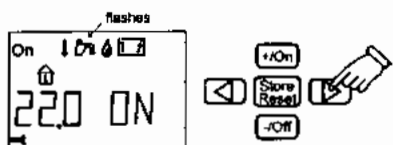


- 3 The warm water symbol is displayed when the panel returns to standby.

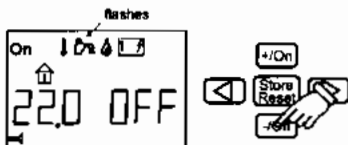


If you want you can switch off more warm water before 30 minutes have elapsed.

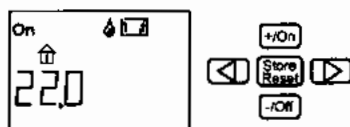
- 1 Press the button with the arrow until the warm water symbol flashes. The "ON" text is shown next to the temperature on the display.



- 2 Switch off the warm water by pressing the -/Off button. The "OFF" text is shown next to the temperature on the display.



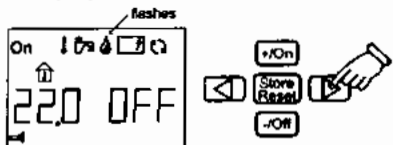
- 3 The warm water symbol goes out when the panel returns to standby.



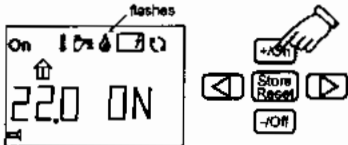
#### 6. Heating with gas

Do as follows to activate heating with gas.

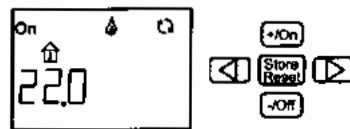
- 1 Press the button with the arrow until the gas heating symbol flashes. The "OFF" text is shown next to the temperature on the display.



- 2 Select gas heating by pressing the +/On button. The "ON" text is shown next to the temperature on the display.

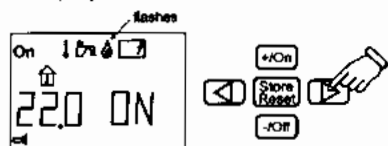


- 3 The gas heating symbol is displayed when the panel returns to standby.

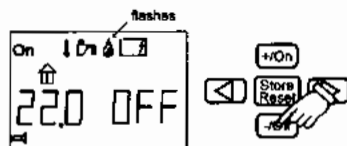


Do as follows to switch off the gas heating.

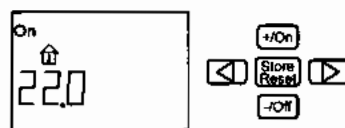
- 1 Press the button with the arrow until the gas heating symbol flashes. The "ON" text is shown next to the temperature on the display.



- 2 Switch off the gas heating by pressing the -/Off button. The "OFF" text is shown next to the temperature on the display.



- 3 The gas heating symbol goes out when the panel returns to standby.

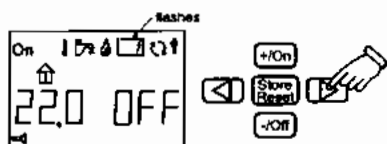


## 7. Heating with electricity

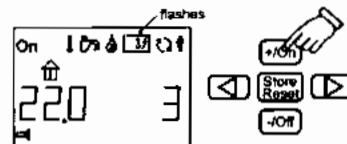
1234

To activate heating with electricity. The greater the power the more rapid the heating will be.

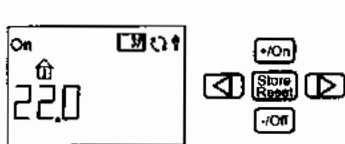
- 1 Press the button with the arrow until the electrical heating symbol flashes. The "OFF" text is shown next to the temperature on the display.



- 2 Select power (1kW, 2kW or 3kW) with the +/On or -/Off buttons. The diagram shows that 3kW power has been selected (some boilers are only equipped with 1-2kW).

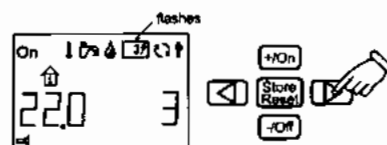


- 3 The electrical heating symbol is shown when the panel returns to standby.

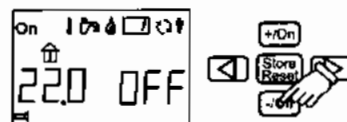


Do as follows to switch off heating with electricity.

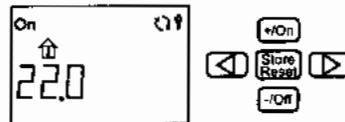
- 1 Press the button with the arrow until the electrical heating symbol flashes.



- 2 Switch off the electrical heating by pressing the -/Off button until all power steps have gone out. The "OFF" text is shown next to the temperature on the display.



- 3 The electrical heating symbol goes out when the panel returns to standby.

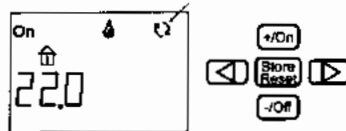


## 8. Circulation pump



This symbol is displayed when the circulation pump is operating (12V-pump or 230V-pump).

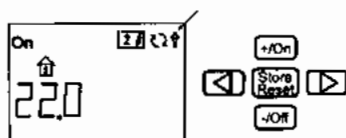
When heating is required in the vehicle, the pump starts automatically. The boiler selects the 230V pump if one is installed in the system. When the 230V is disconnected from the vehicle the 12V pump is automatically selected. The symbol will light up even if the pump is defective.



## 9. 230V connection



This symbol lights up when 230V is connected to the vehicle.



## 10. Temperature



This symbol shows the indoor temperature in the caravan in intervals of 0.5°C.



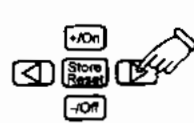
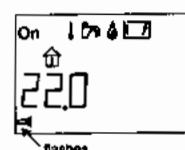
This symbol shows the temperature outside the caravan in intervals of 1°C. To use this function an outdoor temperature sensor must be installed.

## 11. Working with the lower menu row

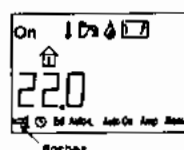


The lower menu row can be used for such things as setting the clock, external start, night temperature, automatic start of the heater. To use the lower menu row you must activate it by doing as follows:

- 1 Press the button with the arrow until the symbol for the lower menu row flashes.



- 2 Light up the menu row by pressing the +/On button. The lower row with symbols lights up.



- 3 To switch off the lower menu row, press the -/Off button when the symbol flashes. Activated functions will be displayed even if the lower menu row is switched off.

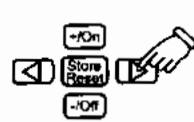
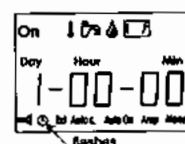


## 12. Clock

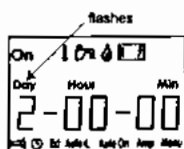


To set the clock, first light up the lower row of functions (see item 11).

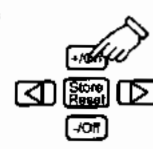
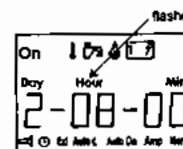
- 1 Press the button with the arrow until the clock symbol flashes.



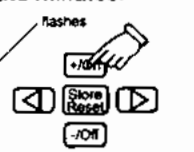
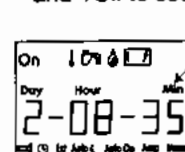
- 2 Press the +/On button. Day flashes. Use +/On or -/Off to set the weekday.



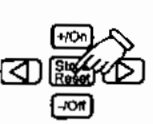
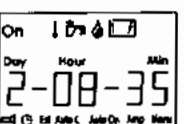
- 3 Step forward with the arrow key until the time is displayed. Hour flashes. Use +/On or -/Off to set the full hour.



- 4 Then step forward with the arrow key until the minutes are displayed. Min flashes. Use +/On and -/Off to set the minutes.



- 5 Press Store and the time you have set is stored. The example shows Tuesday, 08.35.



If the power to the panel is broken and the battery backup is not connected, the clock must be set again.

Weekday: 1-7

1=Monday

7= Sunday

Hours: 0-23

Minutes: 0-59

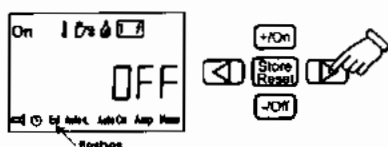
## 13. External start

## Ext

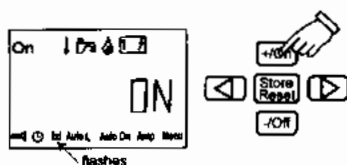
This function is used if you wish to start the heater in the caravan from outside. To use this function it is necessary to have an installation for external start (see

vehicle manual). To activate external start, first light up the lower menu row of functions (see item 11).

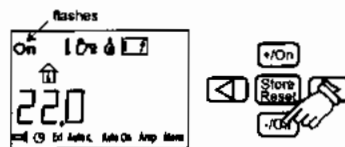
- 1 Press the button with the arrow until the "Ext" symbol flashes. The "OFF" text is shown next to the temperature in the display.



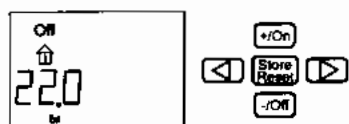
- 2 Press the +/On button. The "ON" text is shown next to the temperature in the display.



- 3 Press the button with the arrow until the On symbol (main breaker) flashes. Press -/Off.



- 4 Off and Ext are shown in the display when the panel returns to standby. External start is activated.



When external start is activated the heater will start with the latest settings and "ON" (main breaker) comes on. If 12V is not connected to the heater, the display will not light up until 12V is connected. The external start function is still activated.

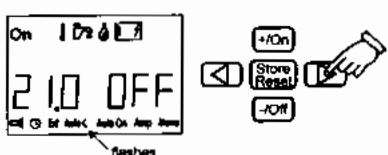
To switch off external start, go to the "Ext" symbol in the on position and press the -/Off button.

## 14. Automatic temperature change Auto

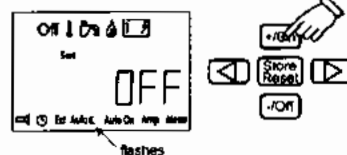
This function is used when you wish to set automatic temperature change, for example, during the night.

In order to activate automatic temperature change, first light up the lower menu row of functions (see item 11).

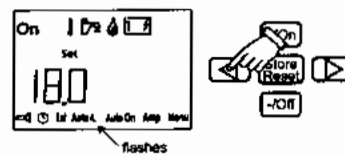
- 1 Press the button with the arrow until the symbol for automatic temperature change flashes. The temperature and the "OFF" text are shown on the display.



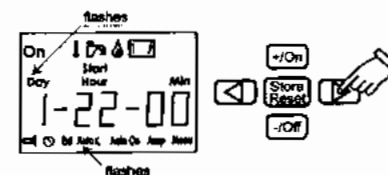
- 2 Press the +/On button. Set flashes and the OFF text is shown in the display. Press +/On to activate the function. "ON" is shown in the display.



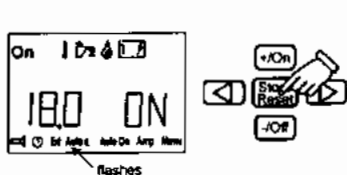
- 3 Press the left arrow key. The required temperature is displayed. Then adjust the temperature by pressing the +/On or -/Off button.



- 4 Then press Store and the start time is displayed. Adjust the start time (the same procedure as in 12) and press the "Store" button.



- 5 Now adjust the stop time and press "Store" again. The text field shows the required temperature and ON.



- 6 If you want the temperature change to be repeated daily, select day 0. Auto is shown in the display when the panel returns to standby.

# 15. Starting the heater automatically AutoOn

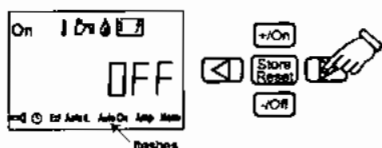
This function is used if you want the heater to start automatically at a later time. The heater works for 24 hours and then stops.

Automatic start is repeated the following week as long as the function is activated.

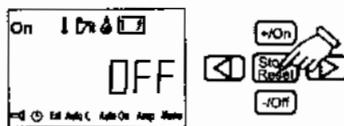
To activate the function you must first light up the lower row of functions (see item 11).

The function controls the panel's main breaker.

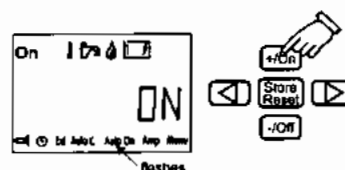
- 1 Press the button with the arrow until the AutoOn symbol flashes. "OFF" is shown in the display. To activate AutoOn, press the +/- On button or the -/Off button to close the function.



- 2 The start time will be displayed. Set the time in accordance with item 12 and press "Store" to store the settings. "OFF" is shown in the display.



- 3 Press the +/-On button. On is shown in the display and AutoOn flashes. Set the panel's main breaker to OFF.



When you get to the vehicle and AutoOn is activated, de-activate AutoOn so that the heater does not stop after 24 hours (the boiler cannot be switched off when AutoOn is activated).

You can then step back with the left-hand button in the settings and press Store in all positions.

# 16. Load monitor Amp

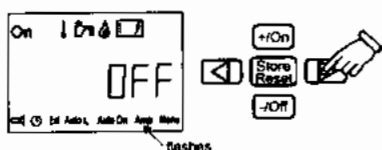
This function is used if you do not want the 230V fuses to become overloaded. If the vehicle's total current consumption exceeds the set value, the boiler's electrical power will be automatically reduced.

On account of voltage variations and tolerances, one can select various control levels (for example, for 6A fuse, one can choose either 5,6,7 Amp setting).

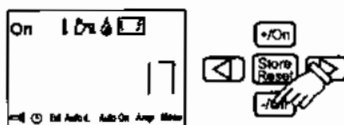
If the fuse does not hold, select a lower set value.

The function is disconnected in the factory setting. To activate the function, you must first light up the lower row of functions (see item 11).

- 1 Press the button with the arrow until the Amp symbol flashes. "OFF" is shown in the display.



- 2 Press the -/Off button to activate and set the function. The following values can be set with +/-On or -/Off buttons, 5,6,7,9,10,11,15,16,17.



- 3 Amp is shown in the display when the panel returns to standby.

## 17. Menu Menu

In the "Menu" setting one can activate a number of functions. To activate the function you must first light up the lower row of functions (see item 11).

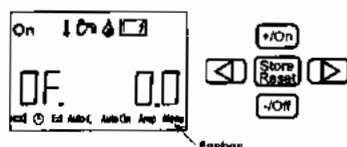
To step between the various functions, use the arrow keys.

### OFFSET (Temperature adjustment)

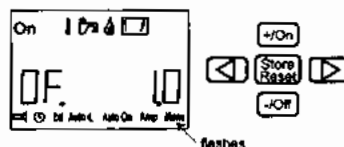
With this function you can calibrate the temperature on the panel if you notice that the temperature (the stabilised room temperature) does not correspond with the temperature shown on the panel.

- 1 Press the button with the arrow until the Menu symbol flashes. Press +On.

- 2 When OF is displayed, adjust the temperature displacement with +/On or -/Off (+/-5°C in intervals of 0.5°C).



- 3 Press Store to leave the OFFSET function.



### PUMP 12V/PUMP AU.

The 12V pump is used in the PU 12 setting even if 230V is connected. In the PU AU position, the 230V pump works, and when 230V is disconnected, the 12V pump starts. The PU AU function is activated in the factory setting.

- 1 Press the button with the arrow until the Menu symbol flashes. Press +On.

- 2 When OF is displayed, step with the arrow key until PU AU is displayed. Press +/On and PU 12 is displayed.



- 3 Press -/Off and PU AU is displayed. Press Store to leave the pump function.

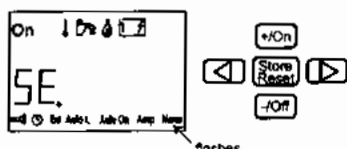


### SERVICE

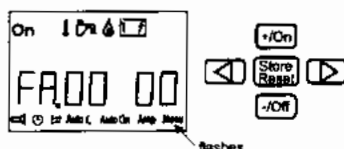
With this function one can see what values\* from the heater are displayed. The values are updated once per second.

- 1 Press the button with the arrow until the Menu symbol flashes. Press +On.

- 2 When OF is displayed, step with the arrow key until SE is displayed. Press +/On to see the various values (-/Off can also be used).



- 3 To leave Service, press Store.



\* The values shown during service are:

**FA (revolutions):** The speed of the fan divided by 2.

**SH (temp):** Warm water temperature.

**HE (temp):** Operating temperature.

**OH:** If the overheating protection has been tripped On or alternatively Off.

**HS (X):** Software version in the heater.

**PS (X):** Software version on the panel.

**I:** Amp. Guideline value shown in steps of 0.5 A.

**WI:** Window breaker on-off.

**ES:** External start on-off.

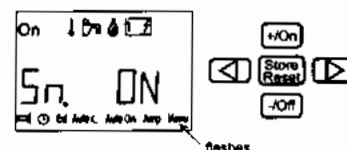
**10-RS:** Heater information, only for ALDE.

### Button sound

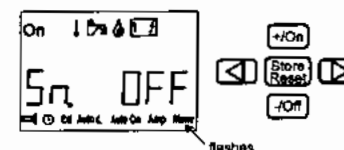
With this function you can connect or disconnect the button sound to the buttons. The button sound is disconnected in the factory setting.

- 1 Press the button with the arrow until the Menu symbol flashes. Press +On.

- 2 When OF is displayed, step with the arrow key until Sn is displayed. Press +/On and the button sound is connected.



- 3 Press -/Off to disconnect the button sound. Then press Store to leave the button sound function.

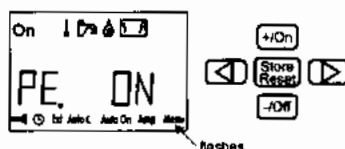


### Constant pump operation

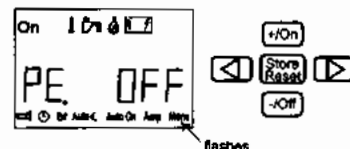
With this function, selected pump is in constant operation. The function is disconnected in the factory setting. This function limits the hot water supply, particularly when there is little need of heat.

- 1 Press the button with the arrow until the Menu symbol flashes. Press +On.

- 2 When OF is displayed, step with the arrow key until PE is displayed. Press +/On and constant pump operation is connected.



- 3 Press -/Off to disconnect constant pump operation. Then press Store to leave the pump operation function.

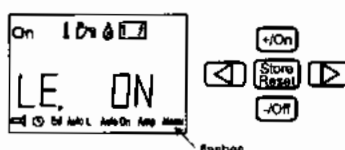


### Automatic temp. increase

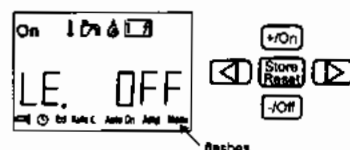
At 02.00 hours (night time) the boiler starts and works in accordance with Warm water (item 5) if the clock is set. The reason for this is to reduce the risk of legionella. The function is disconnected in the factory setting.

- 1 Press the button with the arrow until the Menu symbol flashes. Press +On.

- 2 When OF is displayed, step with the arrow key until LE is displayed. Press +/On and legionella is connected.



- 3 Press -/Off to disconnect legionella. Then press Store to leave the legionella function.



## 18. Fault messages

When a fault occurs in the system the reason is shown in the display.

**LOW BAT:** If the vehicle has a battery voltage of less than 10.5V, the heater stops. The heater is automatically reset when the voltage comes up to 11V.

**FAN:** Faulty fan speed. Automatic resetting after 5 minutes.

**GAS OUT:** Gas finished. Resetting by switching off and restarting the boiler in accordance with item 1.

**OHEAT 1:** Overheating protection tripped. To re-set, disconnect 12V from the boiler and connect again.

**OHEAT 2:** Thermostat tripped. To re-set, disconnect 12V from the boiler and connect again.

**WINDO:** Window open, the boiler stops for gas. Gas operation in the boiler starts when the window is closed. Electrical operation functions. Check the vehicle instructions to see whether this function is installed.

**SERIAL:** There is a connection fault between boiler and panel. Normally, this is a mechanical fault in the connection between the heater and panel. To re-set, break the main current and then start again.

## 19. Emergency start

- Disconnect 12V and the cable to the panel on the heater.
- Connect a cable between 2 and 9 in the contact device (on the heater).
- Connect 12V to the heater.

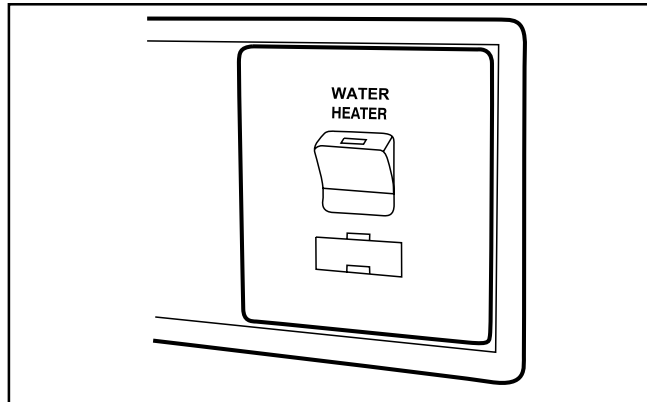
Now the heater starts with gas and 1kW. (Regulation of room temperature does not function, constant pump operation).

#### 4.1.13 Electrical operating instructions (230v)

Ensure that the water heater is full then switch the isolation switch on. (Usually mounted on the bunk face adjacent to the gas control switch.)



- ▲ The water temperature cannot be selected, temperature is automatically limited to 70°C. For a faster heating up the appliance can be simultaneously operated with gas and electrical power.



#### 4.1.14 General Safety Notes:

- ▲ In the event of leaks in the gas systems or if there is a smell of gas:

- Extinguish all naked flames
- Do not smoke
- Switch off the appliance and the gas cylinder
- Open the windows
- Do not operate any electrical switches
- Have the entire system checked by an expert
- Repair jobs are only to be carried out by an expert.
- The following would invalidate the guarantee;
  - a. Any alteration to the appliance (including cowl)
  - b. The use of non-Alde spare parts/accessories
  - c. Non observance of the operating instructions
- The operating pressure for the gas supply is 30mbar (or for 28mbar butane / 37 mbar propane) and must correspond to the operating pressure of the appliance (see name plate).
- Do not operate the water heater when refuelling the vehicle and when in the garage.
- During the initial operation of a brand new appliance (or after it has not been used for some time), a certain amount of fumes and a slight smell may be noticed for a short time. Remedial action here is to immediately run the heater at maximum output and to ensure adequate room ventilation.
- If the burner makes an unusual noise or if the flame lifts off, it is likely that the regulator is faulty and it is essential to have it checked.

## 4.2 THE COUNTRY LEISURE COOKING APPLIANCES

### Operating Instructions

Ensure the gas cylinder is turned on.

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

The use of a gas cooking appliance results in the production of heat and moisture in the room in which it is installed. Ensure that the kitchen is well ventilated, keep natural ventilation holes open or install a mechanical ventilation device (mechanical extractor hood).

Prolonged intensive use of the appliance may call for additional ventilation, for example opening a window, or more effective ventilation, for example increasing the level of mechanical ventilation where present.

## 4.3 THE LINEAR HOB

### 4.3.1 Hotplate Burners

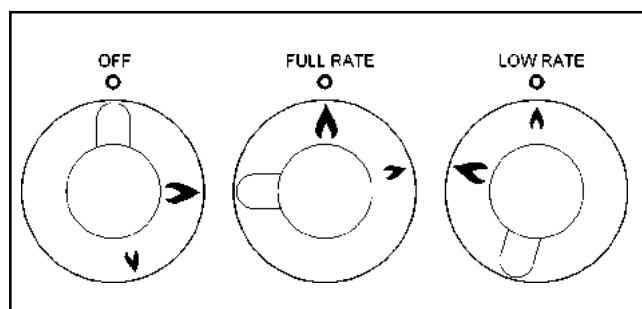


▲ Glass lids may shatter when heated. Turn off all burners before shutting the lid.

▲ The glass lid has a tendency to snap shut towards the lowered position. Make sure all fingers are removed from appliance when closing lid.

Each burner is controlled individually and is monitored by a flame supervision device. In the event of the burner flames being accidentally extinguished, turn off the burner control and do not attempt to re-ignite the burner for at least one minute. The respective knob positions are shown.

To light the burner, press in and turn the knob anti-clockwise to the full rate position and apply a light to the burner or, if fitted, press the ignition button located on the oven control fascia. It is necessary to hold the knob depressed during ignition and 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.



For simmering, turn the knob further anti-clockwise to the low rate position. To turn the burner off, rotate knob fully clockwise until the line on the knob lines up with the dot on the control panel. The burners on this appliance have fixed aeration and no adjustment is required. Depending on the gas being used, the burners should flame as follows:

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

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

Care should be taken not to overload the appliance 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.

## 4.4 THE MIDI OVEN & GRILL

### 4.4.1 Grill



- ▲ Accessible parts may be hot when the grill is used! Young children should be kept away.
- ▲ The heater deflector below the fascia should be pulled out prior to grill operation.
- ▲ Whilst the grill is operating never adjust the deflector without using hand protection.
- ▲ Only use the grill with the door open and always remove the handle from the pan when in use.

1. Ensure gas cylinder/supply is connected and turned on. In the event of a gas smell turn off at gas cylinder/mains and contact supplier.
2. Remove all accessories and packing that may be in the grill including any plastic coating that may be protecting the grill cavity surfaces. Clean the interior before using it for the first time, use soap water and rinse carefully.
3. To light: Open door, push in the control knob and turn to full rate. Hold a lighted match or taper to the burner and push the control knob in and hold. The burner should ignite and the control knob should be held in for 10 -15 seconds before release. If the burner goes out, repeat procedure holding control knob for slightly longer.
4. For models fitted with Spark Ignition the procedure is similar except that the burner can be ignited by depressing the ignition button which is located on the fascia. Ignition must be carried out with the door open, and if the burner has not lit within 15 seconds the control knob should be released and the grill left for at least 1 minute before a further attempt to ignite the burner.



- ▲ Note: the grill must only be used with the door open

6. On first use of the grill, it should be heated for about 20 minutes to eliminate any residual factory lubricants that might impart unpleasant smells to the food being cooked. A non-toxic smoke may occur when using for the first time so open any windows and turn on mechanical ventilators to help remove the smoke.
7. Although the grill does heat up quickly, it is recommended that a few minutes preheat be allowed.
8. Flame Failure Device (FFD): the grill burner is fitted with a flame sensing probe which will automatically cut off the gas supply in the event of the flame going out. In the event of the burner flames being accidentally extinguished, turn off the burner control and do not attempt to re-ignite the burner for at least one minute.
9. It is normal for the flames on this burner to develop yellow tips as it heats up, particularly on Butane.
10. Variation in cooking can be achieved by using the control knob to regulate the heat setting. In addition, the grill pan trivet can be reversed or removed to give a greater choice of grilling height. Always use the highest trivet position for fast toasting.
11. To turn off: turn the control knob until the line on the control knob is aligned with the dot on the control panel. Always make sure the control knob is in the off position when you have finished grilling.

#### 4.4.2 Oven

1. Ensure the gas cylinder is connected and turned on. In the event of a gas smell turn off at gas cylinder and contact supplier.
2. Remove all accessories and packing that may be in the oven and clean the interior before using it for the first time. Use warm soapy water and rinse carefully.
3. **To light** : Open door, push in the control knob and turn to gas mark 9. Hold a lighted match or taper to the burner and push the control knob in and hold. The burner should ignite and the control knob should be held in for 10-15 seconds before release. If the burner goes out, repeat procedure holding control knob for slightly longer.
4. For models fitted with Spark Ignition the procedure is similar except that the burner can be ignited by depressing the ignition button which is located on the fascia. Ignition must be carried out with the door open, and if the burner has not lit within 15 seconds the control knob should be released and the oven left for at least 1 minute before a further attempt to ignite the burner.
5. Place the oven shelf in the required position and close the door. Set the control knob to approximately gas mark 5 and heat the oven for about 30 minutes to eliminate any residual factory lubricants that might impart unpleasant smells to the meals being cooked.
6. Although the oven does heat up quickly, it is recommended a 10 minute preheat be allowed. The oven should reach full temperature in about 15-20 minutes.
7. **To turn off** : turn the control knob until the dot on the control knob is aligned with the dot on the control panel.
8. **Flame Failure Device (FFD)** : the oven burner is fitted with a flame sensing probe which will automatically cut off the gas supply in the event of the flame going out.
9. **Oven shelf** : the oven shelf is designed to allow good circulation at the rear of the oven and is fitted with a raised bar to prevent trays or dishes making contact with the back of the oven. Additional shelves are available through our local caravan retailer.

### 4.4.3 Temperature Control

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

GAS MARK		TEMPERATURE		
		6000/6100		
1/4-1/2	265-275 °F	130-135 °C	very cool	meringues
1	285	140	cool	stewed fruit
2	300	150	cool	rich fruit cake
3	330	165	warm	baked custards
4	355	180	moderate	victoria sandwich
5	385	195	fairly hot	whisked sponges
6	410	210	hot	shortcrust pastry
7	430	220	hot	bread, scones
8	445	230	very hot	puff pastry
9	465	240	very hot	quick browning

DISH	GAS MARK	SHELF POSITION	COOKING TIME
scones	7	2	8-15 mins
small cakes	5	2	15-25 mins
victoria sandwich	4	2	20-30 mins
puff	8	2	15-30 mins
flaky	7	2	15-30 mins
shortcrust	6	2	15-55 mins
shortbread fingers	3	2	25-30 mins
rice pudding	2	3	100-120 mins
baked custard	3	3	50-60 mins
fruit crumble	5	3	30-40 mins
beef	3	3	25 mins per 500g plus 25 mins
	7	3	15 mins per 500g plus 20 mins
pork	3	3	30 mins per 500g plus 35 mins
	7	3	25 mins per 500g plus 25 mins

### 4.4.4 Cooking Guidelines



- ▲ The pan supplied with the appliance is multi functional, for use in grill or oven. Always remove the handle when in use.

Best results will be obtained by the shelf positions in this guide. It is not necessary to preheat the oven but advisable for a range of dishes. The oven is capable of full temperature in 15-20 minutes.

Most cookery books give details of the shelf positions and gas mark settings for each recipe. If in doubt about a recipe you intend to use, study the recipe carefully then find a similar dish in our guide and use our shelf position and gas mark setting recommendation. Shelf positions are from the top down. When roasting with aluminium foil care must be taken that the foil does not impair circulation or block the oven flue outlet.

## Do's and Don'ts

- Do** read the user instructions carefully before using the appliance for the first time.
- Do** allow the oven to heat before using for the first time, in order to expel any smells before the introduction of food
- Do** clean the appliance regularly
- Do** remove spills as soon as they occur
- Do** always use oven gloves when removing food shelves and trays from the oven.
- Do** check that controls are in the off position when finished.
- Do Not** allow children near the cooker when in use. Turn pan handles away from the front so that they cannot be caught accidentally
- Do Not** allow fats or oils to build up in the oven trays or base
- Do Not** use abrasive cleaners or powders that will scratch the surfaces of the hotplate and oven.
- Do Not** allow the lower door to crash onto the floor. Lower it by hand.
- Do Not** under any circumstances use the oven as a space heater.



- ▲ Ensure that the ceramic ball mixer tap arm is clear from the sink or oven glass lid before raising it. Failure to do so could accidentally switch on the tap when lifting the glass lid.

## 4.4.5 Maintenance & Servicing

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.



- ▲ All servicing must be carried out by an approved competent person. After every service the appliance must be checked for gas soundness.

## 4.5 THE FIRE SENTRY SMOKE ALARM

The Smoke Alarm is operational once the battery is connected. When products of combustion are sensed, the unit sounds a loud pulsating alarm until the air is cleared.

### 4.5.1 False Alarms 'Hush' Control

Units with the 'hush' feature have the capability of temporarily disabling the alarm circuit for approximately 7 minutes. This feature is to be used only when a known alarm condition, such as smoke from cooking activates the smoke alarm. The smoke alarm is deactivated by pushing the "Alarm Hush" button on the Smoke Alarm cover. The alarm will silence immediately and 'chirp' every 30-40 seconds for approximately 7 minutes to indicate the alarm is in the temporary 'hush' condition. The smoke alarm will automatically re-activate after approximately 7 minutes and sound the alarm if particles of combustion are still present. The 'hush' feature may be used repeatedly until the air has cleared.

Dense Smoke will override 'HUSH' control feature and sound continuous alarm.



- ▲ Before using the alarm 'HUSH' feature, identify the source of smoke and be certain that safe conditions exist.

### 4.5.2 Testing

Test by pushing test button on cover and holding button down for 2 seconds minimum. This will sound alarm if all electronic circuitry, horn and battery are working. If no alarm sounds, the unit has a defective battery or other failure. You can also test alarm by blowing smoke into it. Test alarm weekly to assure proper operation. Erratic noise or low sound from alarm may indicate a defective alarm. Return it for service.



- ▲ Test smoke alarm operation after caravan has been in storage, before each trip and at least once per week during use.

## 4.6 REFRIGERATORS

### Winter Operation - Dometic Refrigerators



- ▲ Please check that the ventilation grilles or the flue outlets are not blocked by snow, leaves etc.

## 4.7 DOMETIC REFRIGERATOR MODEL RM 8550L

### 4.7.1 Cleaning

Before starting up the refrigerator, it is recommended to clean it inside and repeat this at regular intervals. Use a soft cloth and lukewarm water with a mild detergent. Then wipe out the appliance with clean water and dry thoroughly.



- ▲ To avoid deterioration of materials:
  - Do not use soap or hard, abrasive or soda-based cleaning agents.
  - Do not allow the door seal to come into contact with oil or grease.

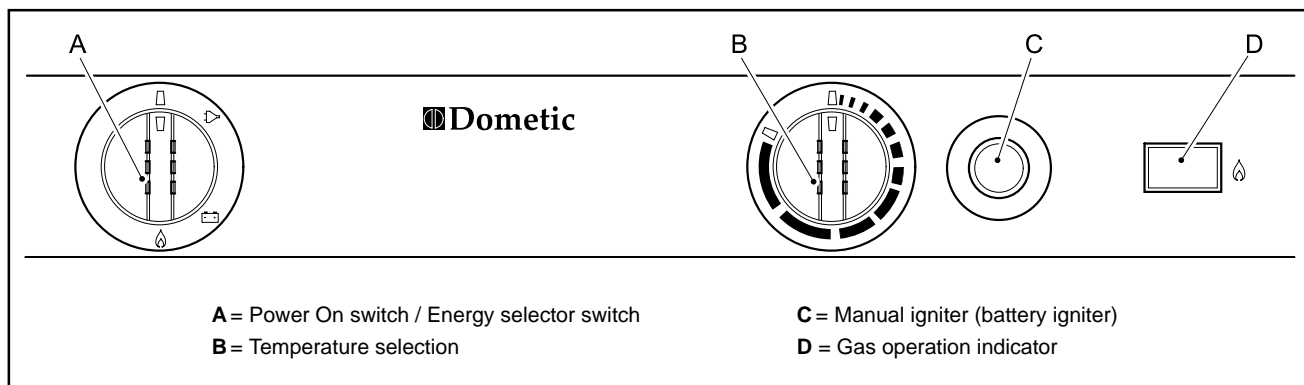
### 4.7.2 Operating modes and use of the refrigerator



- ▲ This refrigerator is equipped to operate on three power modes: AC mains power (230V), 12V DC or gas (propane/butane liquid gas).
- ▲ Select the desired power mode by the energy selector switch (battery igniter type models) or the MODE button (MES, AES). Appliances with automatic energy selection (AES) are additionally provided with automatic mode function. The AES system automatically selects the best energy source for each particular situation.
- ▲ The cooling unit is silent in operation.
- ▲ The refrigerator works reliably on slopes of up to 6 degrees (5 degrees with models starting from 140 litres capacity).
- ▲ When the appliance is started for the first time, there may be a mild odour which will disappear after a few hours. Air the living space thoroughly.
- ▲ The refrigerator will take several hours to reach its operating temperature in the cooling compartment.

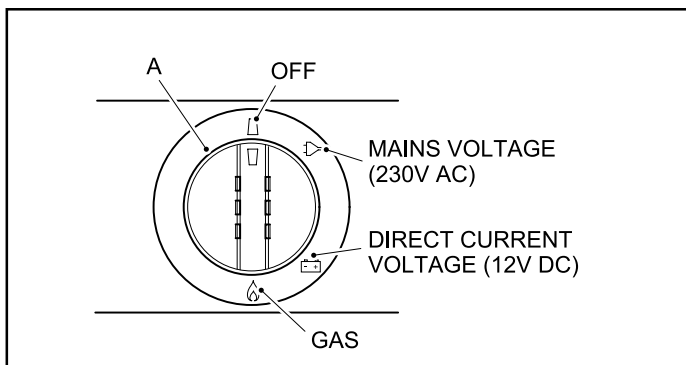
### 4.7.3 Control elements of energy selections (BATTERY IGNITER, MES and AES)

Manual energy selection/manual ignition (RM 8xx0) battery igniter:



**Explanation:**

The refrigerator is equipped to operate on mains power, 12V DC or liquid gas. Select the desired power supply by turning the energy selector switch A. The energy selector switch A has four settings: OFF, AC mains voltage, DC (battery), gas (liquid gas).

**4.7.4 Electrical operation****Appliances with battery igniter (manual energy selection)**

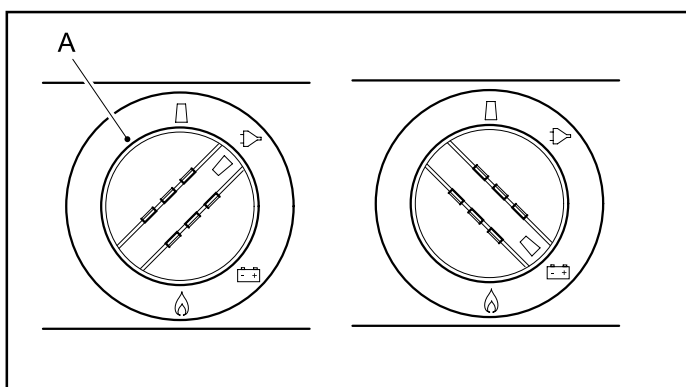
Switch on the appliance by turning the energy selection switch A clockwise to position:

 230V operation,

 12V operation



- ▲ In order to prevent discharge of the on-board battery, 12V operation should only be used while the motor is running.

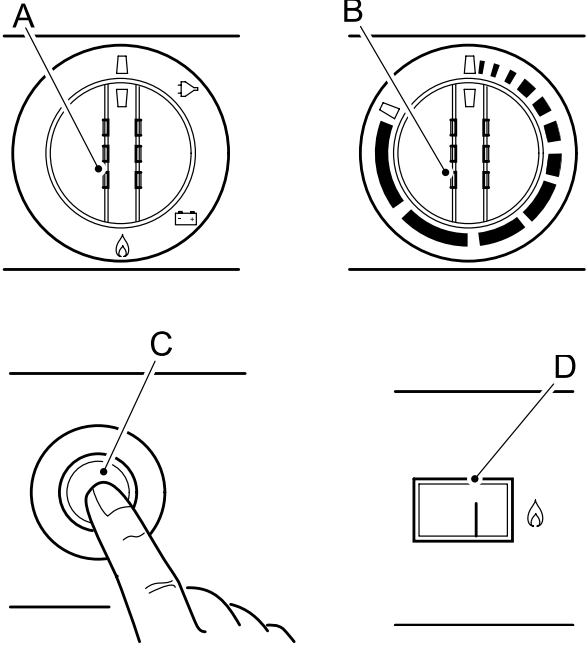
**4.7.5 Gas operation (liquid gas)**

- ▲ The refrigerator must be operated using liquid gas (propane, butane (no natural gas or town gas). When using LPG gas, please consider that the burner needs cleaning at shorter intervals due to the gas combustion method (semi-annual recommended).
- ▲ In Europe, gas operation is permitted while travelling only on the condition that the gas system of the vehicle is equipped with a hose rupture protection. The national regulations of the respective country must be observed.
- ▲ For physical reasons, ignition faults could occur starting from an altitude above sea level of approx. 1000m/3280 ft. (No malfunction!)
- ▲ On the initial refrigerator start-up or after a cylinder change, air may be trapped in the gas line. To purge the air from the lines, switch on the refrigerator and any other gas appliances (e.g. stove) for a short time. The gas ignites without delay.
- ▲ As a basic rule, gas operation is prohibited in petrol stations).


### Prior to starting the refrigerator in gas mode:

- Open the gas cylinder valve.
- Open the shut-off valve for gas supply to the refrigerator.

### Appliances with battery igniter:



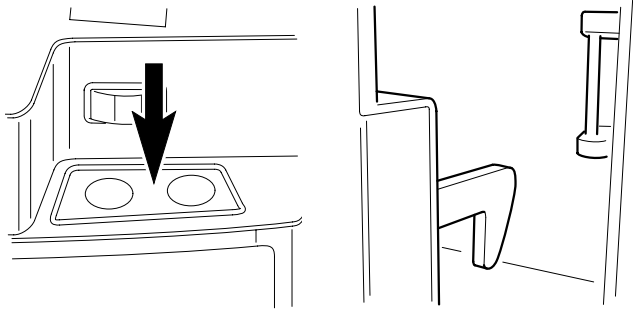
The diagram illustrates the four steps to start the refrigerator. Step 1 shows the rotary selector switch (A) being turned to the flame icon. Step 2 shows the temperature selector knob (B) being turned clockwise and pushed. Step 3 shows a finger pressing the battery igniter knob (C). Step 4 shows the galvanometer pointer (D) moving into the green range, indicating the flame is lit.

1. Turn the rotary selector switch **A** to position .
2. Turn the temperature selector **B** clockwise and push. Keep the controller button depressed.
3. Then, press knob **C** of battery igniter down and keep it depressed. The ignition process is activated automatically.
4. Once the flame ignites, the pointer of galvanometer **D** begins moving into the green range. The refrigerator is operational. Keep knob **B** depressed for approx. 15 seconds and finally release it.



- ▲ Each refrigerator with manual ignition is equipped with an automatic flame safety valve which interrupts the gas supply after approx. 30 seconds when the flame has extinguished.

### 4.7.6 Door locking



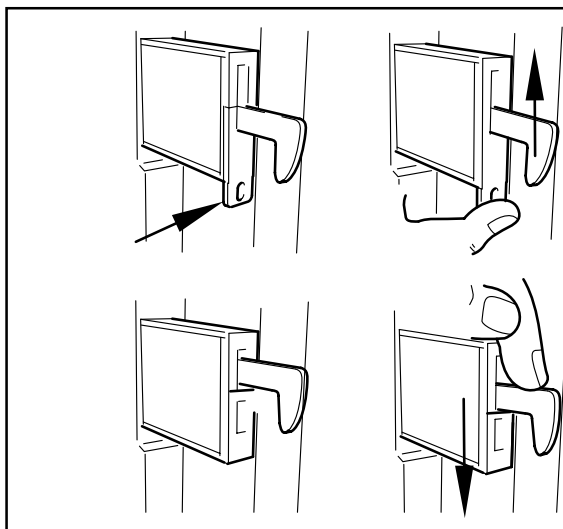
The diagram shows the door locking process. A: The door is open. B: The locking button is pressed. C: The locking hook is engaged, securing the door.

Open the door by pressing the locking button and pull open.

Shut the door again by pushing it to close. The snapping into the lock can be heard.

While the vehicle is parked, the locking hook may be fixed to facilitate opening of the door.

### Fixing and releasing the door lock hook when parking the vehicle



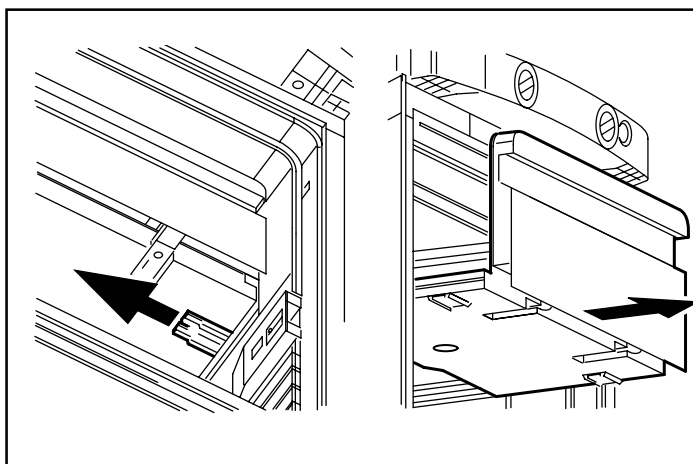
If the vehicle is parked for a longer period of time, the locking hook may be clamped by means of a lockbar. The door may now be opened by just pulling it without need of pressing the locking button.

Restore the original position by pushing the hook down.



▲ As a basic rule, shut and lock the refrigerator door before commencing your journey.

### 4.7.7 Removable freezer compartment

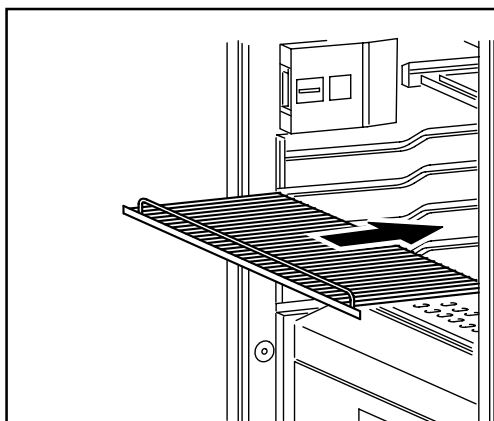


To enlarge the cooling space, just remove the freezer compartment.

Unlock the freezer compartment on both sides and pull it out.

Store the freezer compartment safely in order to prevent damage.

### 4.7.8 Positioning the storage racks

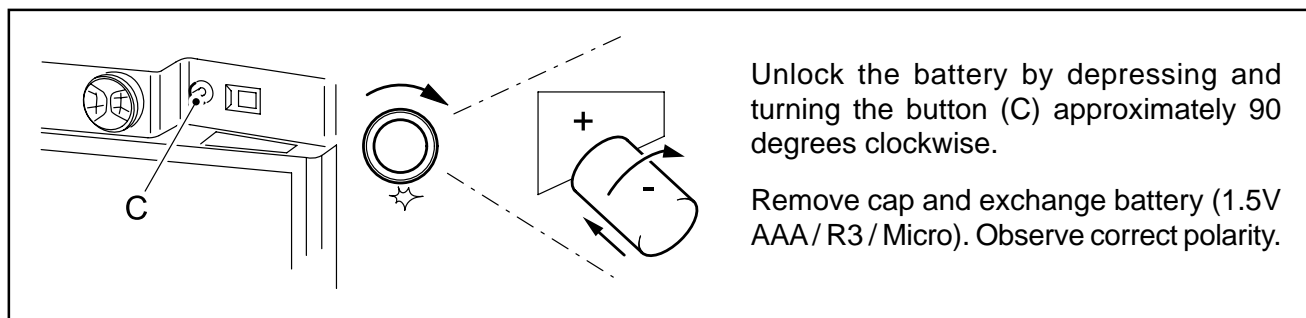


The storage racks may be pulled out by smoothly lifting them and may be positioned as desired.

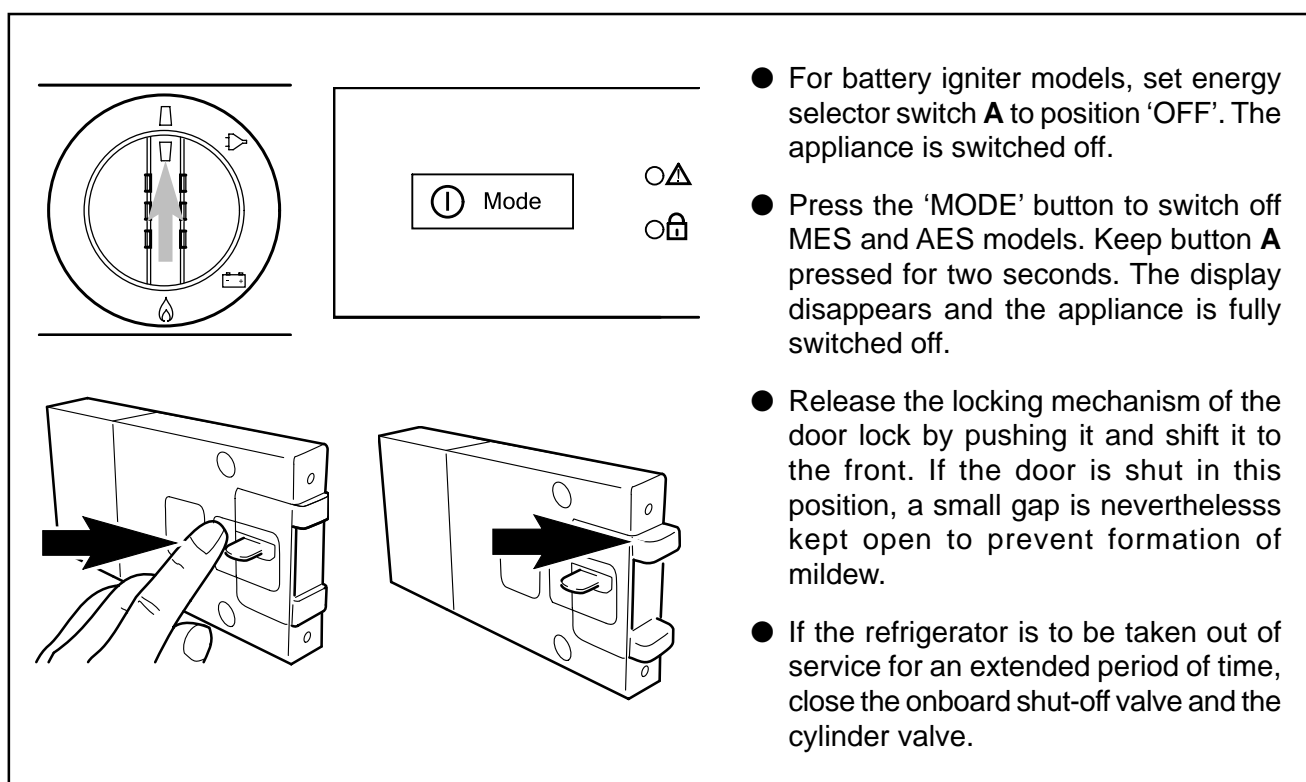


▲ Once the freezer compartment is removed, an additional storage rack may be installed. The storage rack is a piece of extra equipment and may be obtained from Dometic.

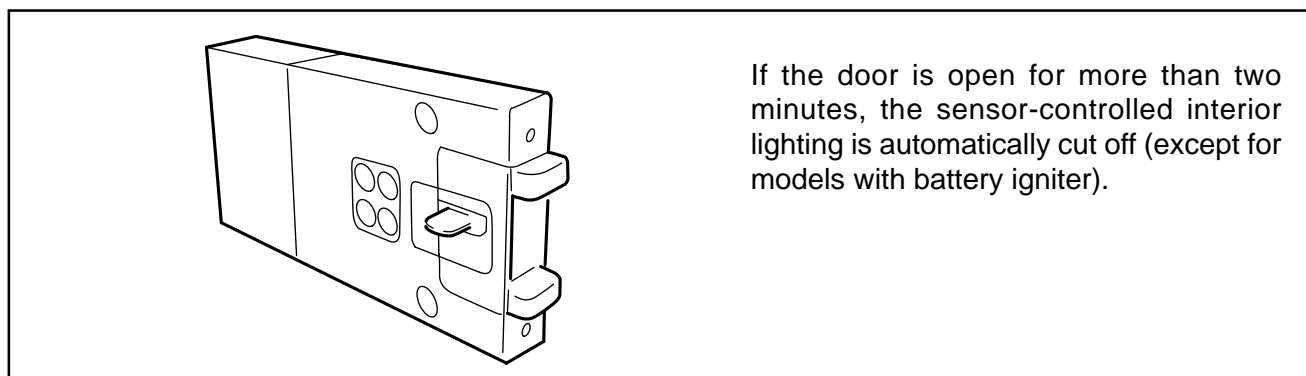
### 4.7.9 Exchange of the igniter's battery



### 4.7.10 Shutting off the refrigerator



### 4.7.11 Lighting



## 4.8 DOMETIC REFRIGERATOR MODEL RM 8501

### 4.8.1 Cleaning

Before starting up the refrigerator, it is recommended to clean it inside and repeat this at regular intervals. Use a soft cloth and lukewarm water with a mild detergent. Then wipe out the appliance with clean water and dry thoroughly.



▲ To avoid deterioration of materials:

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

### 4.8.2 Operating modes and use of the refrigerator



- ▲ This refrigerator is equipped to operate on three power modes: AC mains power (230V), 12V DC or gas (propane/butane liquid gas).
- ▲ Select the desired power mode by the MODE button (MES, AES). Appliances with automatic energy selection (AES) are additionally provided with “automatic mode” function. The AES system automatically selects the best energy source for each particular situation.

### 4.8.3 Maintenance

In compliance with the applicable regulations, please note that the gas unit and the connected ventilation ducts must be checked by authorised technical personnel after first use and after every other year for compliance with the European Standard EN 1949. A test certificate has to be issued. It is the user's responsibility to arrange this test.

- The gas burner must be inspected and cleaned as necessary at least once a year. When using liquefied petroleum gas (tank or refill cylinders) the maintenance interval is reduced to half-yearly or quarterly.

Keep the evidence of maintenance work carried out on your refrigerator.

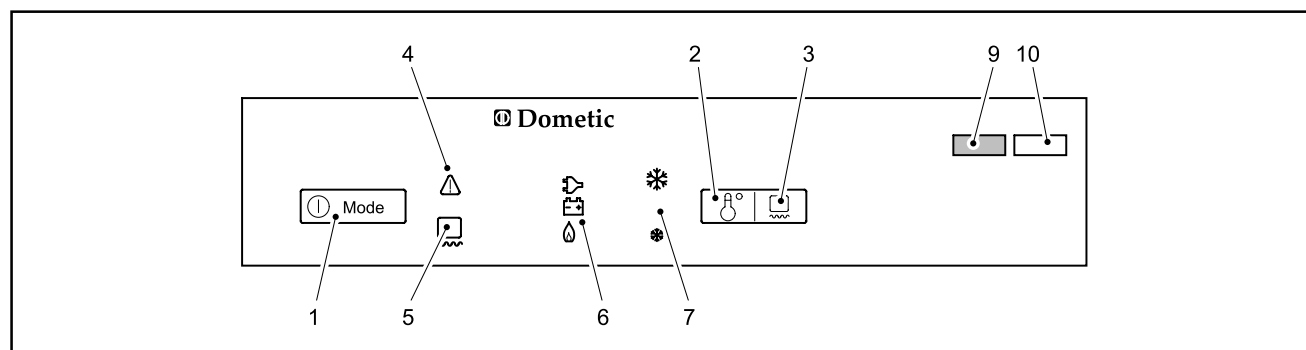
- Work on gas and electrical equipment shall be carried out by qualified personnel only.

It is recommended that this is carried out by an authorised customer services department.

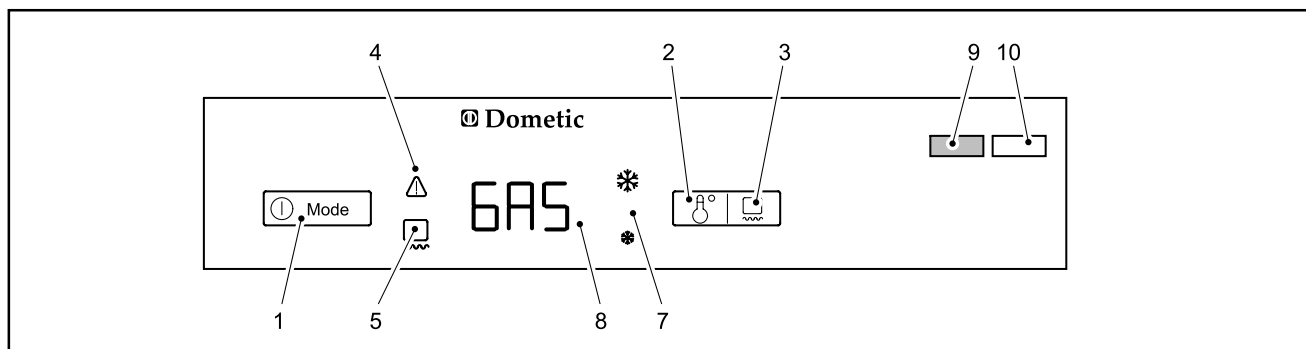
We recommend maintenance following an extended shutdown of the vehicle. Please contact our customer services.

### 4.8.4 Explanation of operating controls

**Manual energy selection / automatic ignition (RMD 8xx1) MES:**



## Automatic energy selection / automatic ignition (RMD 8xx5) AES:



1. (Power on switch / Energy selector switch (MODE))
2. Temperature selection
3. Power On switch frame heating
4. Indicator LED failure
5. Indicator LED frame heating
6. Indicator-LED / operating mode display
7. Temperature level display
8. Operating mode display (only AES)
9. External display "failure" (red)
10. External display "in operation" (blue)

### Explanations:

The refrigerator is equipped to operate on mains power, 12V DC or liquid gas. Select the desired power supply by turning the energy selector switch (1) .

The energy selector switch (1) has four settings: • **Off**, • **Mains voltage** (230vAC), • **Direct-current voltage** (Battery, 12V DC), • **Gas** (liquid gas propane/butane)

Switch the refrigerator ON or OFF by pressing button (1) for 3 seconds. Button (1) allows you to either initiate the requested energy supply or activate dimming of the LED brightness. By pushing once, the indicators illuminate for 10 seconds.

Button (3) allows you to switch on the frameheating in order to avoid a rising of condensed water due to high humidity. During the frameheating is in operation the indicator LED (5) is illuminating.

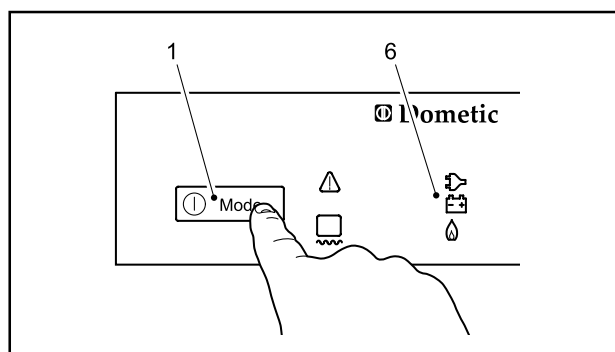
## 4.8.5 Electrical operation

### MES Appliances (manual energy selection)

To start the refrigerator, press button (1) for 3 seconds. The LED (6) of the previously selected operating mode illuminates:

230V , 12V , GAS

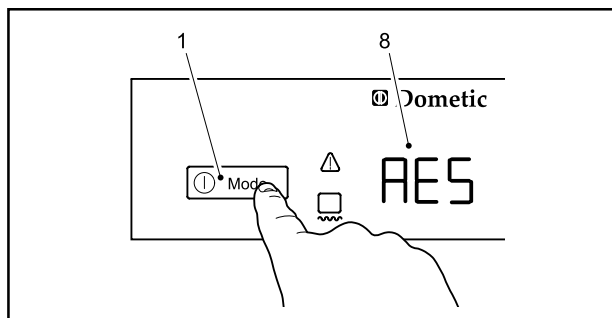
Change the operating mode by pressing button (1) again. The appropriate indicator LED will illuminate.



### AES Appliances (automatic energy selection)

To start the refrigerator, press button (1) for 3 seconds. The previously selected operating mode is displayed, e.g. 230 which means 230V. By pressing button (1) again, you may change the operating modes to:

- AU (automatic energy selection)
- 230V, 12V, GAS (manual energy selection)



Upon switching on, the electronics automatically selects one of the three possible energy types: 230V, 12V, liquid gas. The control electronics automatically ensures that the refrigerator is supplied with the optimum source of energy in each respective case.

Sequence of priority: (1) Solar (12V -), (2) 230V ~, (3) 12V, (4) Liquid gas.



- ▲ If sufficient mains voltage is available (more than 195 V), this power source is selected as prime option. If a solar system capable of powering the refrigerator is installed, the solar 12V supply takes priority. The 12V operation is otherwise only effective while the engine is running.

### 4.8.6 Gas operation (Liquid gas)

- The refrigerator must be operated using liquid gas (propane, butane) (no natural gas or town gas). When using LPG gas, please consider that the burner needs cleaning at shorter intervals due to the gas combustion method (2 - 3 times per year recommended)
- In Europe, gas operation is permitted while travelling only on the condition that the gas system of the vehicle is equipped with a hose rupture protection. The national regulations of the respective country must be observed.
- For physical reasons, gas ignition faults could occur starting from an altitude above sea level of approx. 3280 ft. / 1000 m (No malfunction!)
- On the initial refrigerator start-up or after a cylinder change, air may be trapped in the gas line. To purge the air from the lines, switch on the refrigerator and any other gas appliances (e.g. stove) for a short time. The gas ignites without delay.



- ▲ As a basic rule, gas operation is prohibited in petrol stations.

#### Prior to starting the refrigerator in gas mode:

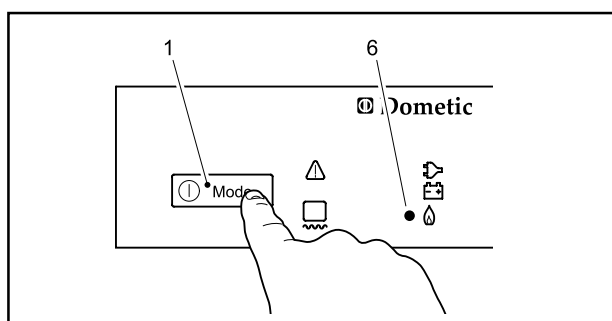
- Open the gas cylinder valve.
- Open the shut-off valve for gas supply to the refrigerator.

### MES-appliances

1. Press button (1) several times until the indicator LED (6) illuminates.
2. The ignition process is activated automatically by means of an automatic igniter.



- ▲ The ignition system will make 2 ignition attempts with 25 seconds interval when the burner fails to light. If repeated attempts fail to start the operation, a fault is indicated (please refer to failure indication).



## AES-appliances

Press button (1) several times until the indicator LED (8) GAS illuminates.

The device is now in manual gas mode. When you select the automatic mode (the display shows AU), GAS is only selected as energy option according to the sequence of priority when none of the two electrical types of power supply is available.

In automatic mode, AES and the currently used type of power supply (e.g. GAS) are indicated alternately.

Switching over to a manual energy selection is possible at any time.

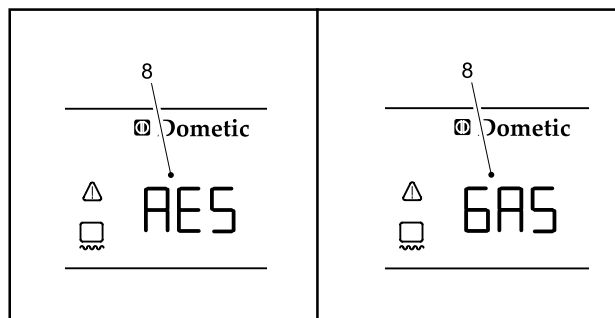
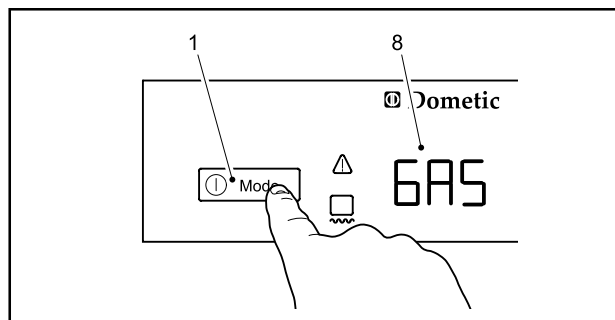
## Refuelling while in AES mode operation



- ▲ In order to prevent unintended switching to gas operation during refuelling, the electronic system starts gas operation of the refrigerator after the motor has been turned off for 15 minutes. During this period the appliance is ready for operation ("stand-by"). In automatic mode the "AU" indication only is illuminated.



- ▲ The use of unshielded flames is prohibited in petrol station environments. Should the refuelling stop last longer than 15 minutes, the refrigerator has to be switched off or switched over to another energy.

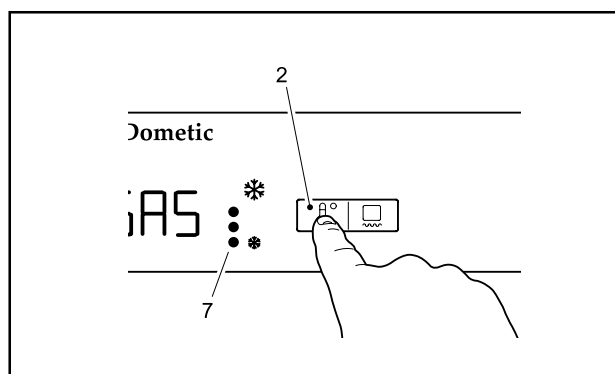


## 4.8.7 Setting of cooling compartment temperature

Select the desired cooling compartment temperature by pressing button (2).

The LED display (7) of the selected temperature setting is illuminated.

The scale starts with MIN position at the bottom LED position (small crystal = highest temperature) and climbs up to MAX position at the upper LED position (large crystal = lowest temperature). Note: The temperature levels do not relate to absolute temperature values.



- ▲ The cooling unit's performance is influenced by ambient temperatures. Please select the medium setting for ambient temperatures between +15°C and +25°C. The unit operates within its optimum performance range. Dometic refrigerators work according to the absorption principle. For physical reasons, an absorption system responds slowly to changes made by the thermostat controller, by loss of cooling energy through opening the door or during storing food. The devices meet the cooling performance requirements of the Climatic Class SN acc. to EN/ISO 7371 in the temperature range of +10°C to +32°C ambient temperature.
- ▲ For temperatures below +10°C, winter covers should be installed. For ambient temperatures exceeding +32°C for a longer period of time, it is recommended installing Dometic additional fan (item no. 241 2985 00).

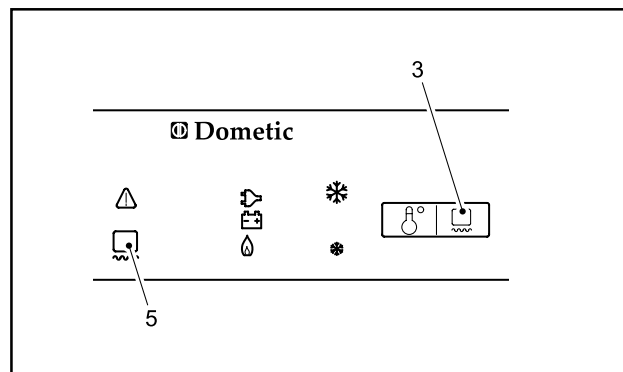
#### 4.8.8 Additional features (MES and AES)

- The brightness of the display reduces after a few seconds if no other buttons are pressed.
- If the door is open, the interior lighting is switched off automatically after 2 minutes.
- Failures are indicated by flashing of the failure indicator LED.
- Should the door be kept open for too long (more than 2 minutes), the blue external LED starts flashing until the door is closed. Only with AES models an acoustic signal is initiated (pulsing whistle tone).
- Should the electronic control detect any failure, an acoustic signal will sound (pulsing whistle tone) for 30 seconds (only with AES models). It is repeated every hour, if the failure is not resolved. At the same time the display starts flashing (refer to troubleshooting section).

#### 4.8.9 Frame heating

All models are equipped with a frame heating (12VDC/3,5W) around the freezer compartment. During summer months with high temperatures and humidity the metal frame may have water droplets forming. To evaporate these droplets switch on the frame heating with switch (3). The LED (5) indicates that the heating is on.

The frame heating is in operation with a presetting of 2 hours and switched off afterwards automatically. The frame heating can be deactivated every time by pressing the button (3).



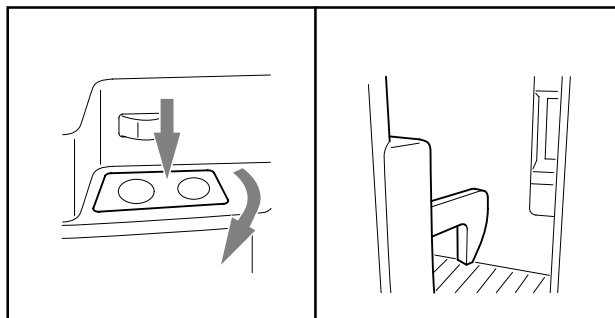
## 4.8.10 Door locking

### 4.8.11 Manual doorlock

Open the door by pressing the locking button and pull open.

Shut the door again by pushing it to close. The snapping into the lock can be heard.

While the vehicle is parked, the locking hook may be fixed to facilitate opening of the door.

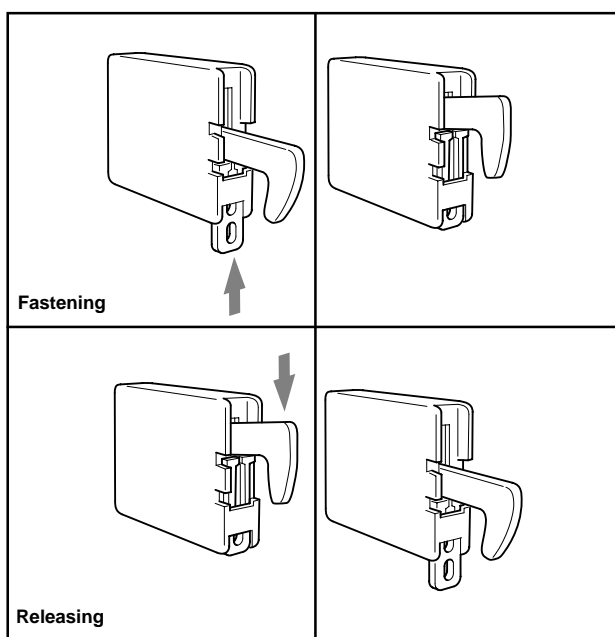


### 4.8.12 Fastening and releasing the doorlock hook when parking the vehicle

If the vehicle is parked for a longer period of time, the locking hook may be clamped by means of a lockbar. The door may now be opened by just pulling it without need of pressing the locking button.

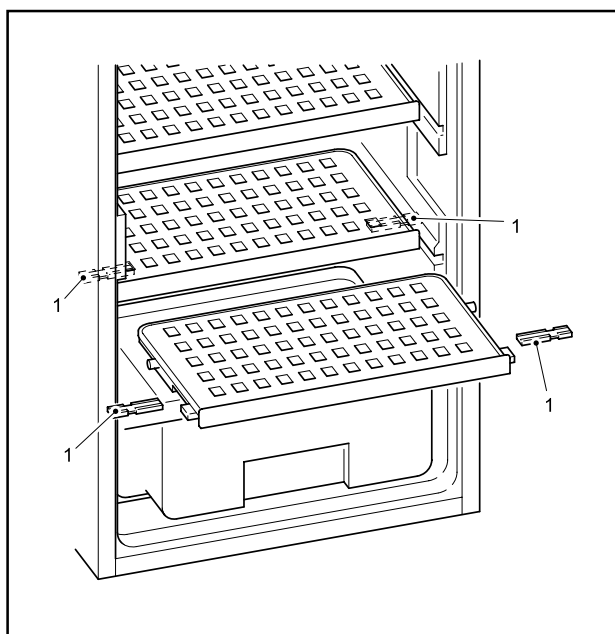


▲ As a basic rule, shut and lock the refrigerator before you start your journey!



### 4.8.13 Positioning the storage racks

The storage racks may be pulled out by loosening the two locking devices (1) underneath. For loosening pull the slider to the middle, for fastening pull them sideways.

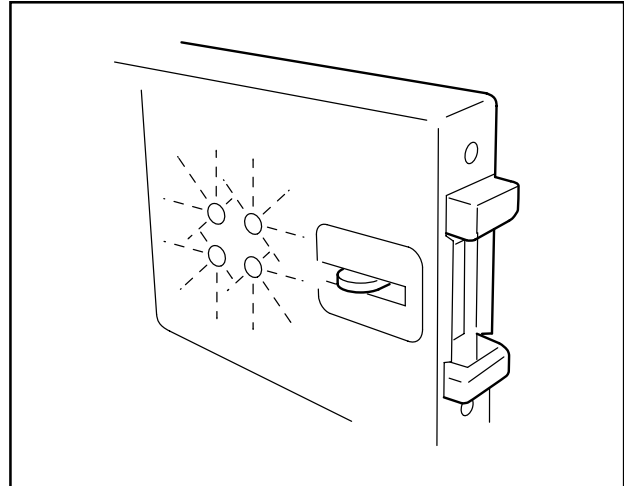


#### 4.8.14 Lighting

If the door is open for more than 2 minutes, the interior lighting is automatically cut off.



- ▲ Please contact the authorized Dometic Service if a failure occurs.



#### 4.8.15 Storing food and making ice cubes

#### 4.8.16 Storing food in the cooling compartment

- Switch the refrigerator on approx. 12 hours before filling it.
- Always store pre-cooled foods in the refrigerator. Make sure that the food is well cooled when it is bought and also when transporting it. Use insulated cooling bags.
- Open the refrigerator door only for a short period of time when removing products.
- Products must be packed - best of all in closed containers, wrapped in aluminium foil or similar - and stored separately from each other, in order to prevent drying out or odours.
- Allow foods that have been warmed up to cool down before storing.
- Avoid storing products in the refrigerator that could emit volatile flammable gases.
- Do not expose the refrigerator to direct sun light. Please bear in mind that the temperature inside a closed vehicle increases sharply if exposed to sunlight and that this can reduce the efficiency of the refrigerator.
- Ensure that air circulation of the cooling unit is not obstructed. Keep the ventilation grilles free from obstructions.

#### 4.8.17 Storing food in the freezer compartment

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



- ▲ When ambient temperatures are lower than +10°C and the refrigerator is exposed to these temperatures for extended periods of time, an even regulation of freezer temperature cannot be guaranteed for system-related reasons. This can cause the temperature in the freezer to rise and the stored goods to melt.

## 4.8.18 Making ice cubes

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

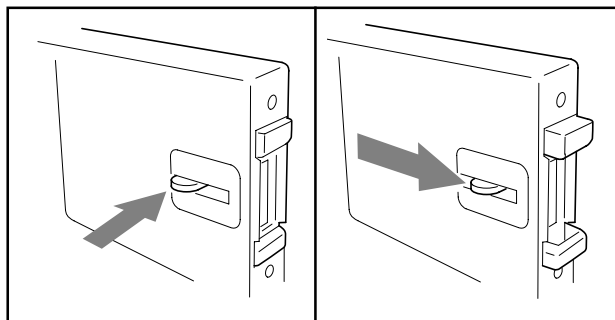
1. Fill the ice cube tray with drinking water.
2. Place the ice cube tray in the freezer compartment.



▲ Only use drinking water!

## 4.8.19 Shutting off the refrigerator

- Press the “MODE” (s. 4.3) button to switch off MES and AES models. Keep button pressed for 3 seconds. The display disappears and the appliance is fully switched off .
- Release the locking mechanism of the door lock by pushing it and shift it to the front. If the door is shut in this position, a small gap is nevertheless kept open to prevent formation of mildew.
- If the refrigerator is to be taken out of service for an extended period of time, close the onboard shut-off valve and the cylinder valve.



## 4.8.20 Defrosting

As time goes by, frost builds up on the fins inside the refrigerator. A layer of frost thicker on one side may occur and does not represent a malfunction. When this layer of frost is about 3 mm thick, the refrigerator should be defrosted.

- Switch off the refrigerator, as described in section “Shutting off the refrigerator”.
- Remove all food and the ice cube tray.
- Leave the refrigerator door open to allow air to enter and to prevent formation of mildew.
- After defrosting (freezer compartment and fins free of frost), wipe both cooling compartments dry with a cloth.



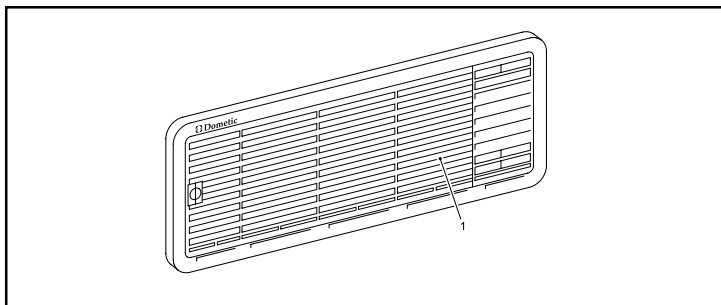
▲ Water thawing in the main compartment of the refrigerator runs into an appropriate container at the back of the refrigerator. From there, the water evaporates.



▲ The layer of ice must never be removed forcibly, nor may defrosting be accelerated using a heat source!

### 4.8.21 Winter operation

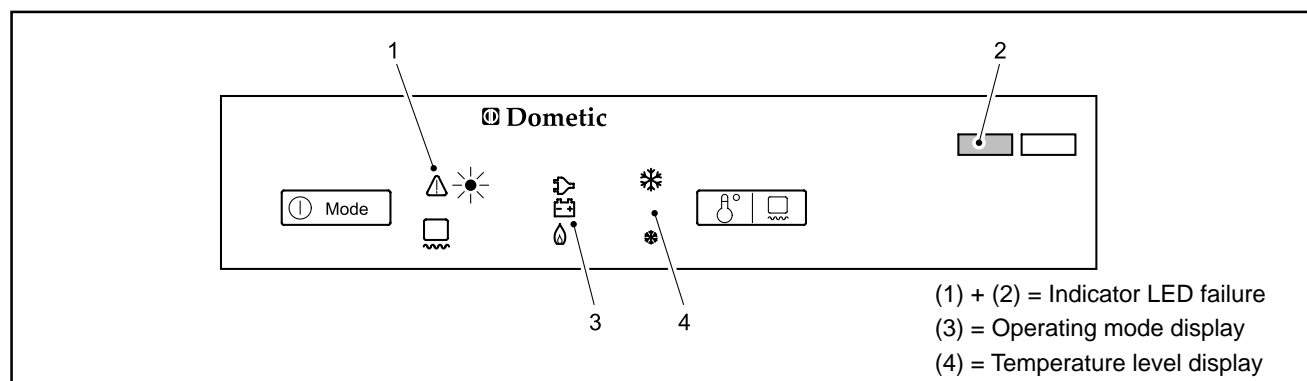
In winter, check that the ventilation grilles and the exhaust duct system (1) have not been blocked by snow, leaves, etc.








### 4.8.22 Information on failure display and trouble-shooting

- If a malfunction occurs, the indicator LED "Failure" (1) flashes and LED (2) simultaneously. In the case of AES models an acoustic alarm sounds for 30 seconds. If the failure is not resolved, it repeats after 1 hour.

### 4.8.23 Status messages on the display



Display:		Failure:
<b>MES</b>	<b>AES</b>	
 LED is flashing	"230" is flashing	<b>230V mode:</b> "230V" not available or voltage too low
 LED is flashing	"12" is flashing	<b>12V mode:</b> "12V" not available or voltage too low
 LED is flashing	"GAS" is flashing	<b>GAS/Auto mode:</b> Flame not ignited
All temperature setting LEDs are flashing	All temperature setting LEDs are flashing	Temperature sensor defective, refrigerator works on mid temperature setting
 LED + all temperature setting LEDs are flashing	"HE1" is flashing	230V - Heating element defective
 LED + all temperature setting LEDs are flashing	"HE2" is flashing	12V - Heating element defective

#### 4.8.24 Troubleshooting

Before notifying the authorised Service Centre, please check whether:



- ▲ The instructions in the section “Operating the refrigerator” have been followed.
- ▲ The refrigerator is level.
- ▲ It is possible to operate the refrigerator with any available power source.

#### Failure: The refrigerator does not cool sufficiently.

##### Possible cause

- a) Inadequate ventilation to the unit.
- b) Thermostat setting is too low.
- c) The condenser is heavily frosted.
- d) Too much warm food has been stored inside within short period of time.
- e) The appliance has been running for only a short period of time.
- f) Ambient temperatures too high.

##### Action you can take

- a) Check that the ventilation grilles are not covered.
- b) Set thermostat to a higher level.
- c) Check that the refrigerator door closes properly.
- d) Allow warm food to cool down before storage.
- e) Check whether the cooling compartment works after approximately 4-5 hours.
- f) Regularly remove ventilation grilles.

#### Failure: The refrigerator does not cool in gas operation mode.

##### Possible cause

- a) Gas cylinder empty.
- b) Is the supply shut-off device open?
- c) Air in the gas pipe?

##### Action you can take

- a) Change gas cylinder..
- b) Open the shut-off device.
- c) Switch off the appliance and start again. Repeat this procedure 3-4 times, if necessary.

#### Failure: The refrigerator does not cool in 12V operation.

##### Possible cause

- a) On-board fuse defective.
- b) On-board battery discharged.
- c) Engine not running.
- d) Heating element defective (please also refer to failure indication).

##### Action you can take

- a) Fit new fuse.
- b) Check battery, charge it.
- c) Start engine.
- d) Please inform the Dometic Customer Services.

#### Failure: The refrigerator does not cool in 230V operation.

##### Possible cause

- a) On-board fuse defective.
- b) No connection to supply voltage.
- c) AES: gas operation despite connection to the supply voltage?
- d) Heating element defective (please also refer to failure indication).

##### Action you can take

- a) Fit new fuse.
- b) Establish power connection.
- c) Appliance switches to gas operation due to insufficient supply voltage (automatically switches back to 230V operation).
- d) Please inform Dometic Customer Services.

#### 4.8.25 Maintenance

- Works on gas components and electrical installation may only be carried out by authorised personnel. We recommend to contact your Dometic Service Centre.

- EN 1949 stipulates that the appliance's gas equipment and its associated fume system must be inspected after installation and a certificate issued.

Afterwards a qualified technician must inspect according to EN 1949 every two years and a certificate issued.

It is the user's responsibility to arrange for inspections after purchase.

- It is recommended that the gas burner be inspected and cleaned as necessary at least once a year.

We recommend maintenance following an extended shutdown of the vehicle.

## 4.9 THETFORD CASSETTE C-250 TOILET

### 4.9.1 Introduction

The Thetford Cassette Toilet is a high quality product. The toilet forms an integral part of your caravan or camper bathroom, thanks to its functional design which combines modern styling and ease of use. The C-250 Cassette Toilet is manufactured from high quality synthetic materials which makes it a durable, user and maintenance friendly toilet.

The toilet is made up of two parts: a permanently fixed part and a Waste Holding Tank that is accessible from the outside. The removable Waste Holding Tank is located under the toilet bowl and can be removed via a door on the outside of the caravan or camper. The Thetford Cassette Toilet is the solution to the sanitary problem in your caravan or camper!

The operating instructions cover Thetford Cassette Toilet models C-250S, C-250CS (models connected to the vehicle's central water tank) and C-250CWE (model with its own flush-water tank). There are differences in the use of these models. Please ensure that you follow the instructions that apply to your toilet model.

#### PARTS

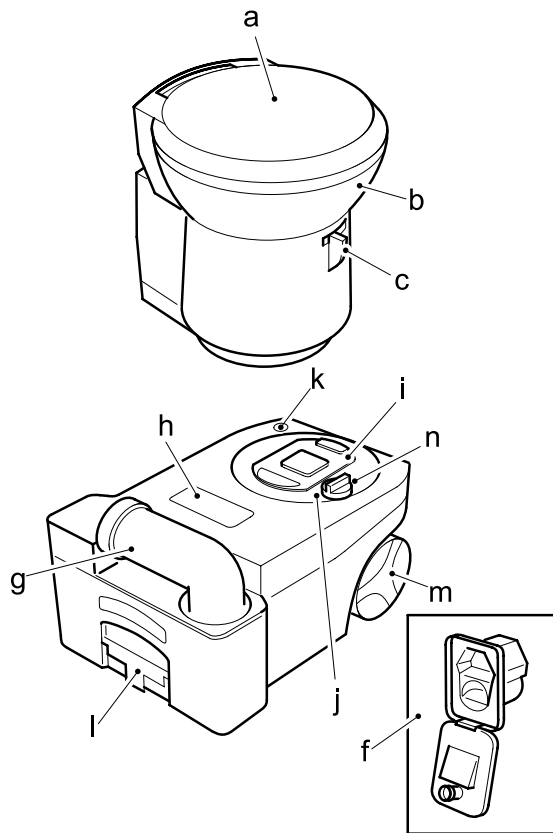
- a) Removable Seat and Lid
- b) Swivelling Toilet Bowl
- c) Blade Handle
- d) Flush Button
- e) Waste Holding Tank Level Indicator
- f) Water Filling Door (only if toilet has own flush-water tank)
- g) Rotating Emptying Spout
- h) Automatic Pressure Release Vent
- i) Sliding Cover
- j) Removable Mechanism
- k) Vent Plunger
- l) Pull-out Handle
- m) Wheels
- n) Blade Opener
- o) Access Door to Waste Holding Tank

#### Optional Features

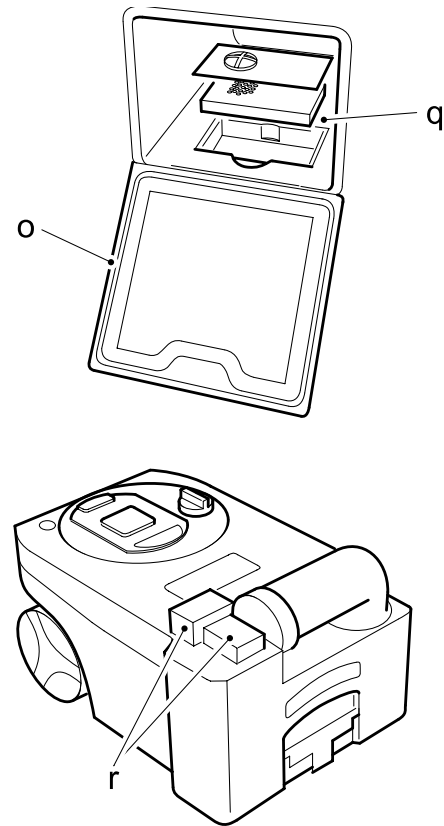
- p) Electric Blade
- q) Automatic Ventilator
- r) Waste Pump-Out System
- s) Waste Holding Tank Multi-Level Indicator
- t) Flush-Water Tank Level Indicator (only if toilet has its own flush-water tank)

**Note.** Optional features can be bought from Thetford dealerships.

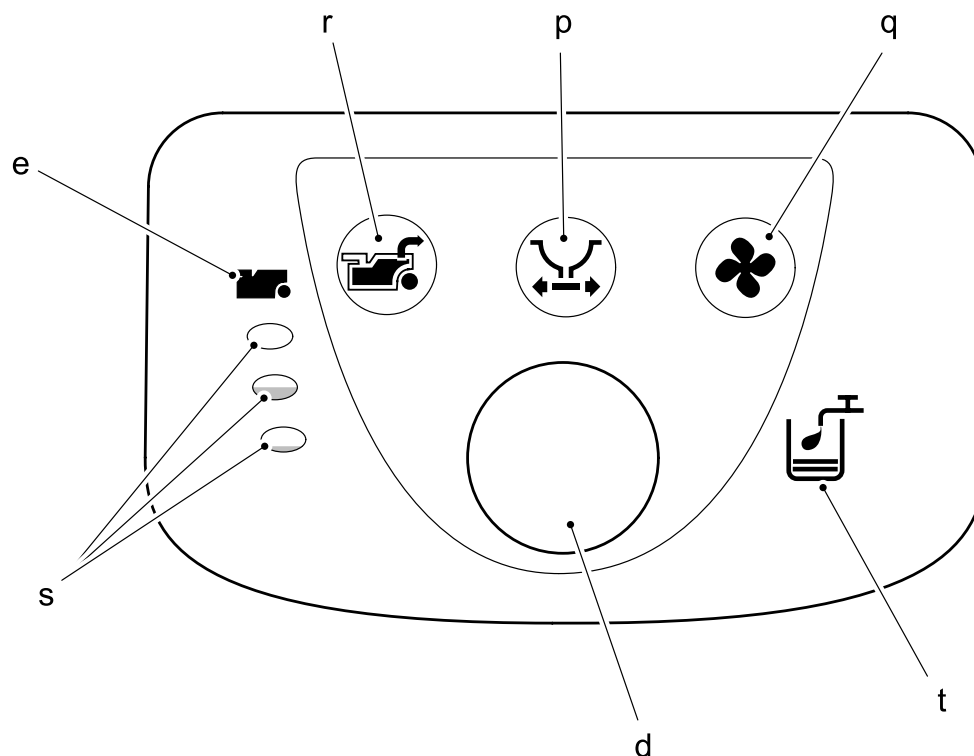
## Standard C250



## Optional features C250



## Control panel (with optional features)



### 4.9.2 Preparing for use (standard)

1. Open the access door on the outside of your caravan or camper.
2. Remove the Waste Holding Tank by pulling the safety catch (which holds the tank in place) upwards.
3. Pull the Waste Holding Tank outward to the stop. Tip it slightly and take the tank fully out.
4. Place the tank upright and turn the rotating emptying spout upwards. The emptying spout ensures that the tank can be easily and hygienically emptied.
5. Remove the cap, with the measuring cup inside, from the emptying spout and pour the correct dosage of Thetford toilet fluid (see product label) into the holding tank. This avoids unpleasant smells and keeps the inside of the tank clean. Next add approximately 2 litres of water - enough to ensure that the bottom of the Waste Holding Tank is covered. Screw the cap back onto the emptying spout and turn back to its original position.



- ▲ The Emptying Spout Measuring Cap is supplied in the same packaging as this manual.



- ▲ Never add toilet fluid directly via the blade or the toilet bowl as this could damage the lip seal of the Waste Holding Tank. Always pour the fluids via the emptying spout.

6. Slide the Waste Holding Tank back into its original position via the access door. Make sure that it is secured with the safety catch. Close the access door and lock it. Your Thetford toilet is now ready to use.



- ▲ Never use force if you cannot get the tank back into place easily. This may cause serious damage. If blockage occurs, always check if the blade handle is in the correct (closed) position.

7. For toilets with own Flush-Water Tank: Open the water filling door and fill the flush-water tank with the correct dosage of Aqua Rinse. This Thetford toilet fluid keeps the flush water fresh and improves the flushing. Next, fill up the flush-water tank with clean water (approximately 8 litres) using a ferry can or hose. Your toilet is now ready to use.

### 4.9.3 Using the toilet (standard)

8. Turn the bowl to the desired position with the lid closed and using both hands.
9. To activate the control panel, press the flush-button once. The control panel display will stay activated for approximately 5 minutes. Run some water into the bowl by pressing the flush button again briefly.
10. The toilet may be used with the blade open or closed. To open the blade, slide the blade handle under the toilet bowl sideways. After use, open the blade (if still closed) and flush the toilet by pressing the flush button for several seconds (if necessary re-activate the control panel). Close the blade after use.



- ▲ If your toilet has its own flush-water tank, please make sure that you do not travel with a flush-water tank that is too full. Do not travel with water in the toilet bowl. Failure to adhere to this notice may result in water damage to your caravan or motor home.

#### 4.9.4 Emptying

The Waste Holding Tank has a capacity of 18 litres and requires emptying when the red light (LED) on the toilet control display lights up, when the Waste Holding Tank only has capacity for approximately 2 more litres, which is no more than two to three further uses.

Make sure that the blade is closed. Open the access door located outside the vehicle, pull the safety catch upwards and remove the Waste Holding Tank.

11. Place the Waste Holding Tank in an upright position (Pull-Out Handle at the top, Wheels at the bottom). Slide the handle sideways - to the front of the tank - until it snaps out of its locked position.
12. Pull the handle up and wheel the Waste Holding Tank to an authorized waste disposal point.
13. Push the handle back into its locked position. Turn the emptying spout upwards and remove the cap from the spout. Hold the Waste Holding Tank in such a way that during emptying you can operate the vent plunger with your thumb. To empty the tank without splashing, depress the vent plunger while emptying the tank. After emptying, rinse the tank and blade thoroughly with water.



- ▲ Do not seriously shake the tank or use high pressure water cleaners. This may cause damage to the tank's interior.



- ▲ The vent plunger should only be depressed once the emptying spout is pointing downwards. Prepare the toilet for re-use if required. Slide the Waste Holding Tank into the toilet and close the access door.

#### 4.9.5 Emptying with Optional Features

14. Waste Holding Tank Multi-Level Indicator: The lower lamp indicates that the Waste Holding Tank is almost empty; the middle lamp indicates that it is more than half full; when the upper lamp lights up, the tank needs emptying as it can only take 2 - 3 further uses.



- ▲ The Waste Holding Tank Level Indicator will flash when the holding tank is not present. In this case the toilet will not flush.

15. Waste Pump-Out System: When activating the control panel this feature automatically lights up. When the Waste Holding Tank Level Indicator illuminates, press the Waste Pump-Out button to pump out the waste from the holding tank into the vehicle's waste tank. The button will flash while the waste is being pumped and will stop automatically (after approximately 5 minutes) when all waste has been transferred. If the vehicle's waste tank is full, the Waste Pump-Out light will flash rapidly and no pump-out will be possible until the central tank is emptied. (Check the level of the vehicle's waste tank on the vehicle's central console). After the Waste Holding Tank has been emptied, there will be approximately 1.5 litres of waste left in the tank. This is normal. Add 2 litres of water and a correct dosage of Thetford toilet fluids to the Waste Holding Tank.



- ▲ It is vital that the correct amount of toilet fluid is added to ensure the proper breakdown of the waste in the holding tank. Only use the system when the tank is full. Using the system too often on an empty tank can cause damage to the pump, which could cause the system to fail.

#### 4.9.6 Cleaning and Maintenance

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



- ▲ Never use bleach, vinegar or other powerful household cleaners that contain these substances. These may cause permanent damage to the seals and other toilet components.

## **Toilet Bowl**

- Squirt Thetford Bathroom Cleaner into the toilet bowl.
- Flush the toilet bowl with water and wipe down the rest of the toilet with a damp cloth.
- Clean seat and lid The seat and lid can easily be removed: Lift the seat and lid assembly and pull the round pins (inside the assembly) outwards from the pin holes. After cleaning, replace the seat and lid by positioning the round pins in front of the pin holes and push the lid and seat downwards.
- To keep your flush water fresh and to prevent deposits from forming in your toilet bowl, add a correct dosage of Aqua Rinse in your flush water tank, if present, on your toilet.

**Tip!** For a really shining toilet, dry with a soft dry cloth after cleaning.

### **4.9.7 Waste Holding Tank**

To keep your Waste Holding Tank fresh and clean, Thetford has developed a number of different toilet fluids. Thetford toilet fluids suppress smells, reduce formation of gas, promote breakdown of toilet waste and increase the life span of a mobile toilet. We advise a thorough cleaning of the Waste Holding Tank once each season. Next to using Thetford's Cassette Tank Cleaner, the powerful cleaning agent for the periodical cleaning of the Waste Holding Tank of your toilet, we suggest the following: -

- Remove the removable mechanism from the Waste Holding Tank by turning it anti-clockwise and rinse it under a tap.
- Remove the cover plate from the Automatic Pressure Release Vent by prising it up using a small screwdriver. Use one hand to push the Automatic Pressure Release Vent open while holding the float of the Automatic Pressure Release Vent on the inside of the tank with the other hand. Push the float upwards, turn it 180 degrees and remove it from below. Remove the rubber seal underneath the float. Rinse the float and rubber seal under a tap. Replace the rubber seal and float for the Automatic Pressure Release Vent using the same method in reverse.

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



- ▲ Never use Vaseline or any vegetable oil except olive oil. These may cause leakage or malfunction. The lip seal is a part of the toilet that is subject to wear. Depending upon the extent and manner of use, the seals will become less effective and will need replacing periodically.

### **4.9.8 Winter operation**

You can use your Thetford Cassette Toilet as normal in cold weather as long as the toilet is situated in a heated location. If there is a risk of freezing we advise that the toilet is drained by following the instructions under 'Storage'. For environmental reasons the use of antifreeze, such as that used in car radiators, is not recommended.

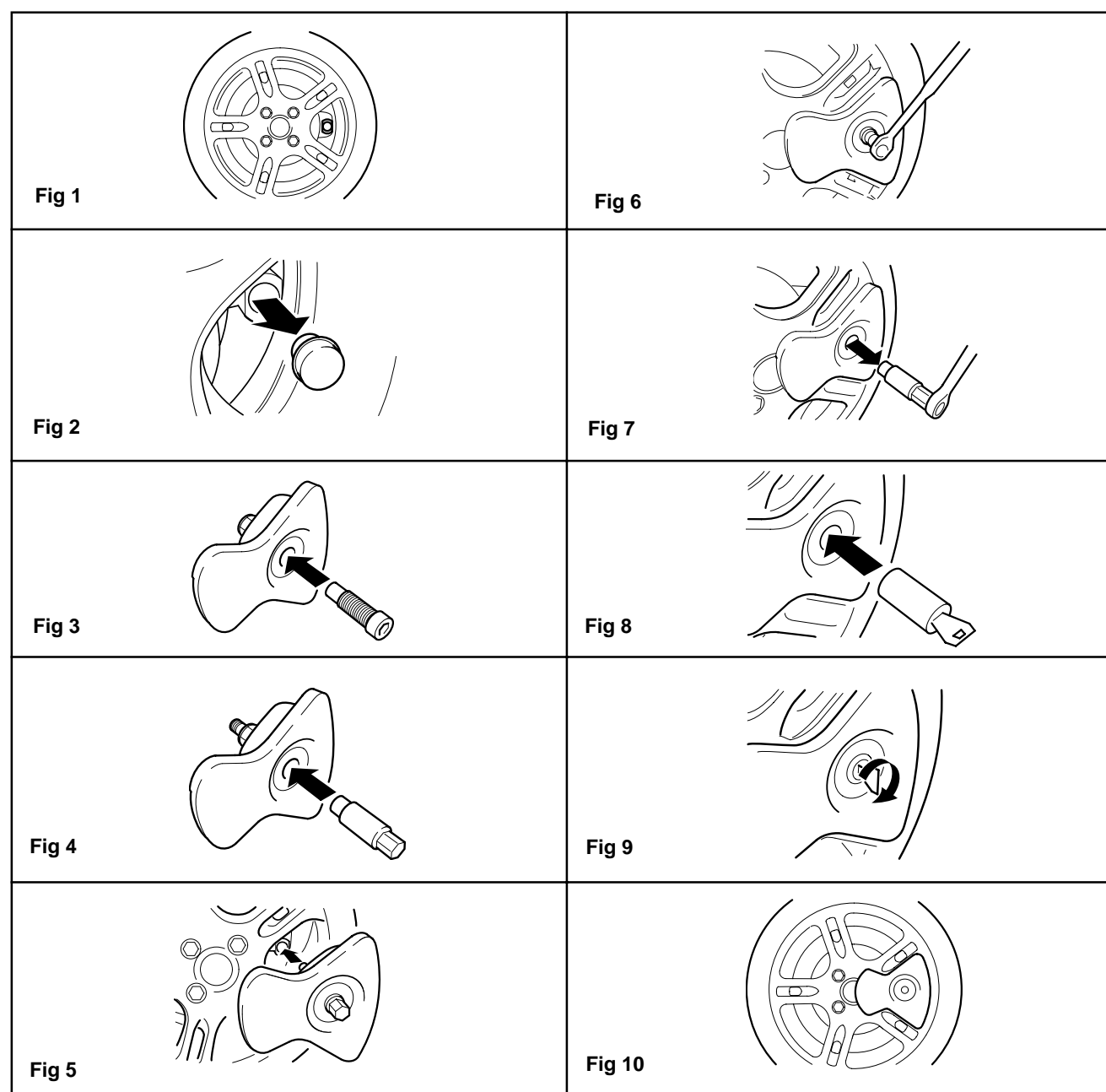
#### 4.9.9 Storage

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

- Activate the Control Panel by pressing the flush button. Open the blade and press the flush button until water stops flowing into the bowl. Close the blade. Open the access door on the outside of your caravan or camper and empty the Waste Holding Tank at an authorized waste dump. Follow the instructions for cleaning and maintenance. To allow the Waste Holding Tank to dry, do not place the cap back on the emptying spout of the tank.
- 16. If the toilet has its own flush-water tank, place a sufficiently large bowl under the drain tube to catch the remaining water from the flush-water tank and remove the drain plug. When no more water exits, put the drain plug on the drain tube, put it back in its original position and close the access door. If the toilet is connected to the vehicle's water tank, please follow your vehicle's instructions for draining the central water system. If your toilet is optionally featured with a Waste Pump-Out System, take out the Waste Holding Tank and completely clean it (see Cleaning and Maintenance). After cleaning, fill it with water, put it back and empty it via the waste pump-out system. Repeat this twice.

## 4.10 AL-KO SECURE WHEEL LOCK

- Align the wheel so that the receiver can be seen in the centre of the rim opening. DO NOT use the rim opening in which the tyre valve is fitted (Fig 1).
- Unscrew the plastic cap from the receiver and store in the tool kit box. (When AL-KO Secure is not in use, always screw the plastic cap in place). (Fig 2).
- Insert the locking bolt into the rim specific insert (Fig 3).
- Insert the locking bolt socket key (Fig 4).
- Line up the locking bolts and assembly with the receiver (fig 5).
- Tighten the locking bolt socket using the wheel spanner provided (or torque wrench as shown) to wheel torque (ideally 86 Nm). (fig 6).
- Remove the locking bolt socket key. (fig 7).
- Insert barrel lock (Fig 8).
- Hold the lock fast and lock (Fig 9).
- The AL-KO Secure is now fitted (fig 10).



## 4.11 AL-KO ATC TRAILER CONTROL SYSTEM

AL-KO ATC is an electronic, emergency braking system for caravans and trailers. It automatically recognises critical swinging motions and applies the caravan brakes accordingly to regain control of the car and caravan.



- ▲ AL-KO ATC is a passive safety product and activates the braking system on the caravan in unsafe driving conditions. The driver has a responsibility under law to ensure that the elements of towing safety are met, including driving within the legal speed limit, consideration of road, weather and other traffic conditions, correct loading and coupling of the caravan.

ATC is designed to fit only on AL-KO Chassis and is not suitable for non AL-KO Chassis.

ATC only functions for caravans with a rigid towbar.

The electrical connection between the towing vehicle and caravan must be in good working order.

### 4.11.1 System requirements

ATC draws power from the towing vehicle towbar and requires connection to either:

Twin 7-pin connection - ATC can be connected via the auxiliary 12S (white/grey) plug and requires power on pins 3 (earth) and 4 (permanent supply). Please ensure that your vehicle towbar is correctly connected to ensure correct ATC operation. This can be checked with the use of a multimeter.

13 pin connection - ATC can be connected via the 13-pin plug and requires power on pins 9 (permanent supply) and 13 (earth). Please ensure that your vehicle towbar is correctly connected to ensure correct ATC operation. This can be checked with the use of a multimeter.

### 4.11.2 Operating instructions

After coupling the caravan correctly to the towing vehicle, connect the 12N and 12S plugs or the 13 pin plug to the towbar.

Upon connection, ATC will carry out an initial self test and the LED light on the front fairing will light up RED. During the self test, the sound of the push rod moving inside ATC can be heard. When the self test is complete, the LED will turn GREEN or flashing GREEN to signal that ATC is active.

If the LED does not change to green, then ATC is not functioning correctly.



- ▲ Prior to commencing any journey, ensure that the caravan lighting is fully operational and check the vehicle is loaded appropriately, the nose weight and tyre pressures are correct and confirm that the caravan is coupled to the car correctly.

## 4.12 THE ALKO CARAVAN CHASSIS

### 4.12.1 Chassis members

The recommended tow vehicle coupling height is 415 +/- 35mm from the ground to the centre of the ball.

Manufactured from high quality steel, the chassis has extra deep sections to provide strength at points of maximum stress. Large elongated holes are punched in the longitudinal and towbar, ('A' frame) members, to reduce weight to a minimum. Each hole incorporates a return flange to maintain the required strength and provide rigidity in the extra deep sections.

The chassis frame is of a bolted construction which, should the need arise, allows replacement of individual parts.

The chassis is Hot Dipped Galvanised. This is regarded as one of the best forms of corrosion protection. It does however require minimal maintenance in certain circumstances.

When new the chassis is of a bright and shining appearance. As the galvanising cures during the initial 2 to 3 month period, this will gradually change to a medium to dark grey colour. This grey finish is the ideal, giving the correct protective coating. During this curing period the surface should be protected to avoid possible wet storage stain, in the form of a soft, light coloured, porous, oxidation layer. If the chassis members are in contact with any salt deposits from roads this should immediately be washed off with a high pressure washer. Salt attracts moisture allowing the surfaces to remain wet, this prevents curing and also allows formation of wet storage stain.



- ▲ It is recommended that the chassis be washed off, using a pressure washer on an annual basis (particularly after winter usage) to avoid undesirable build up of salt and dirt deposits.

The galvanised chassis should not be painted or subjected to any other protective treatment.

Should the galvanising become superficially damaged exposing the steel core, this should be cleaned and treated with a cold galvanising spray obtainable from vehicle accessory outlets.

Damage to chassis members through impact etc. must not be straightened or welded. Damaged chassis members must be replaced.

### 4.12.2 Drilling or welding of parts or accessories



- ▲ This chassis is designed and built to precise tolerances and must not be drilled or welded.

### 4.12.3 Independent suspension

The ALKO rubber suspension is designed and developed to suit all types of road conditions and is maintenance free. Three rubber elements are contained within a hexagonal axle tube. These provide suspension and have inherent damping characteristics. (Only the hubs and wheel brakes require attention - see axle booklet Part No. 580458).

### 4.12.4 Coupling head

The ball couplings are entirely automatic in operation and designed for one hand operation to suit the 50mm international ball recommended by the British Standards Institution, National Caravan Council and the Society of Motor Manufacturers and Traders.

#### 4.12.5 Secondary braking (Breakaway cable)

Please refer to details in Section 2.2.5, page 2-3.

#### 4.12.6 Uncoupling

Having lowered the jockey wheel to the ground, operate the handle as previously described. Lift the coupling clear of the towing ball either manually or by operating the telescopic jockey wheel.

#### 4.12.7 Brake drum/hub assembly

The Euro Axle fitted to your Bailey caravan comes complete with maintenance-free wheel bearings greased and serviced for life. Adjustment is not required during the design life of the sealed bearing (100,000 km).



- ▲ If replacement of the brake drum or shoes is required, this must be carried out by authorised AL-KO Service Centres. Specialist tools and equipment are required. The rear hexagonal bolt covered by a black plastic cover must NEVER be touched.

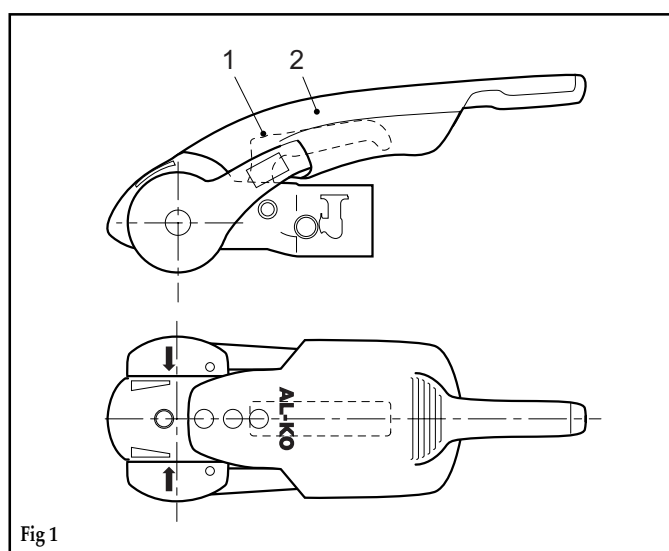
#### 4.12.8 Operating instructions

Coupling handle (Fig. 1/Item 1), Stabiliser Lever (Fig. 1/Item 2)

The Stabiliser lever (Fig. 2/Item 2) must be in the uppermost position (open).

#### 4.12.9 Coupling

- 1) Pull the coupling handle (Fig. 3/Item 1) up in the direction of arrow. The coupling mechanism has an open position ie. as long as the AKS 3004 is not placed on the ball, the handle will remain open. Put the opened coupling onto the clean towball. The handle must now make an audible click and return to the flat position.



- ▲ The coupling is correctly engaged when the green edge of the safety indicator button is visible (Fig. 4/Item 3).
- ▲ Always ensure that the jockey wheel is fully raised and secure before commencing any journey.

## 4.12.10 Stabiliser Unit:

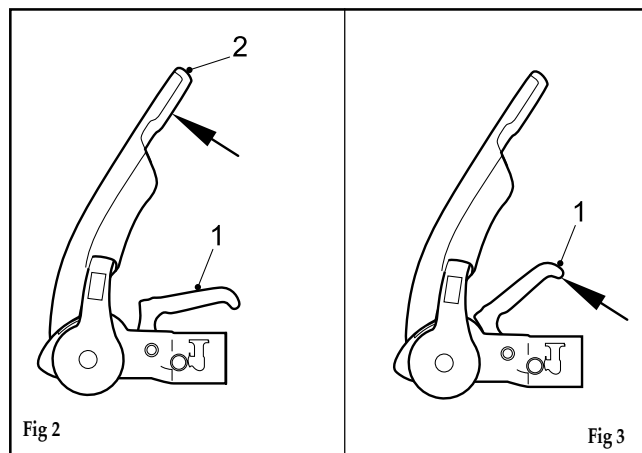
- 2) To operate the Stabiliser (once coupled to the towball), simple press the stabiliser lever down as far as it will go (Fig. 4/Item 2).

## 4.12.11 Uncoupling

- 1) Pull the stabiliser lever handle up as far as it will go, open the coupling handle and lift the AKS 3004 from the towball. With larger nose loads, coupling and uncoupling can be made easier by using the jockey wheel to assist lifting.

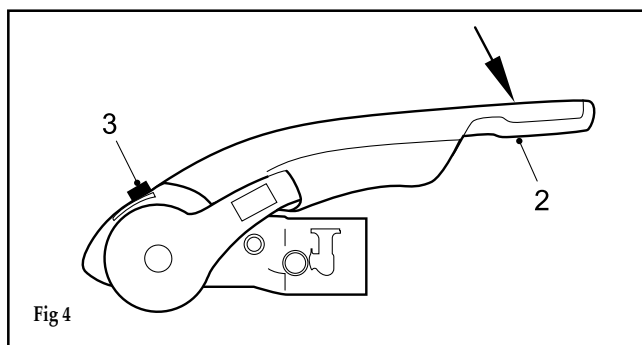


- ▲ The friction pads are pressed against the towball and hence generate a stabilising/damping force. These pads are therefore subject to wear over time, however they will have a long service life (circa. 30,000 Miles), provided they are well maintained and kept free of grease/dirt.



## 4.12.12 Checking the efficiency of the left/right friction pads:

- 1) Couple up AKS 3004
- 2) Open Stabiliser lever (Fig. 5/Item1).
- 3) Close Stabiliser lever until resistance is felt (ie friction pads are in contact with the ball but not yet under pressure).
- 4) If the arrow on the arm (Fig. 5/Item 4) is before or on the marked area (Fig. 5/Item 2) the friction pads are still as new (See A)
- 5) The arrow on the arm should lie between the marked area on the soft dock (See B)
- 6) If the arrow on the plate reaches or passes the marked area on the soft dock then the friction pads need replacing (See C).



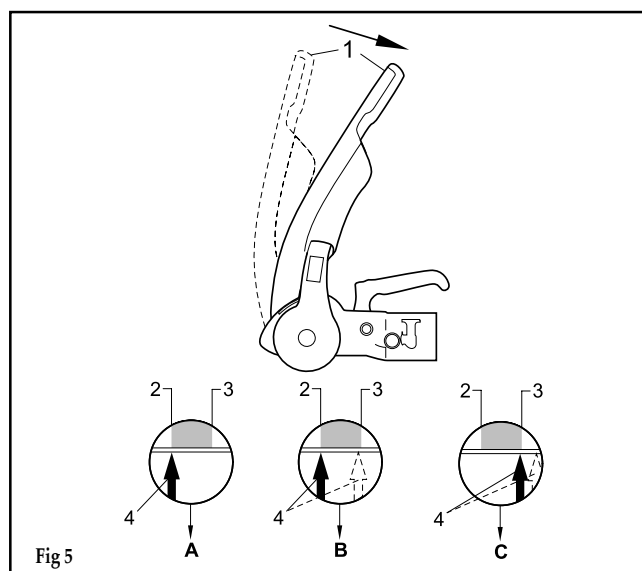
- ▲ It is not necessary to adjust the friction pads

## 4.12.13 Manoeuvring operation

For easier manoeuvring (on campsites etc), pull the stabiliser lever to the 'up' position.

Please do not use the stabiliser lever as an manoeuvring handle. Please use the handles on the Caravan or fit the AL-KO manoeuvring handle to your jockey wheel (available separately).

- 1) During opening or closing, the AKS must only be operated by one person.



- 2) Press stabiliser lever down by hand force only DO NOT use your foot or an extension bar, this will damage the components (Fig. 6).
- 3) When opening or closing the stabiliser lever, please ensure your hand does not touch the coupling handle - you may accidentally trap your fingers! (Fig. 6).

#### 4.12.14 Noises whilst driving

As a rule, the friction pads of the AKS 3004 do not make a noise during driving. Any clicking, creaking or squeaking noises that do arise may be due to the following:

- a) Foreign bodies or dirt between the friction pad and tow ball. b) Dry operation of the drawshaft inside the overrun device. c) A detachable towball which has too much play in the locking mechanism.

#### 4.12.15 Remedial Action

- a) Clean the tow ball and friction pads by lightly rubbing the surface (100-120 grit emery paper)
- b) Lubricate the drawshaft sleeve via the grease nipples. In addition, push the gaiter forward and grease (DIN 51 825 KTA 3K) the exposed part of the shaft (Fig. 7).
- c) Visit a specialist workshop to have the ball holding area checked for damage and the locking mechanism for function. If necessary, change the towball.

#### 4.12.16 Storing

To reduce the possibility of contamination of component parts of the AKS 3004 the stabilising handle should be closed.

#### 4.12.17 Towing ball

The automobile towing ball should measure 50mm maximum and 49mm minimum diameter (DIN 74058). If the ball is below 49mm diameter it should be replaced immediately.

#### 4.12.18 Overrunning device

The device housing is packed with grease on assembly, but will require periodic maintenance to ensure smooth operation of the braking system.

- i. Regrease the shaft bearings via the grease nipples provided at 3000 mile intervals, and before storage.
- ii. Ensure correct functioning of all pivot pins and levers and oil regularly.
- iii. Ensure correct functioning of handbrake ratchet and oil regularly.

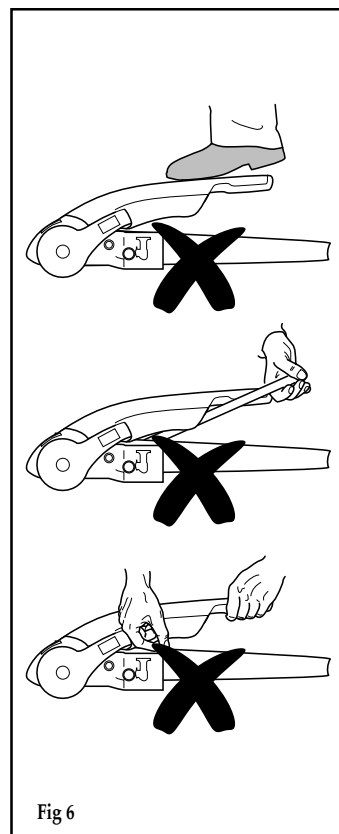


Fig 6

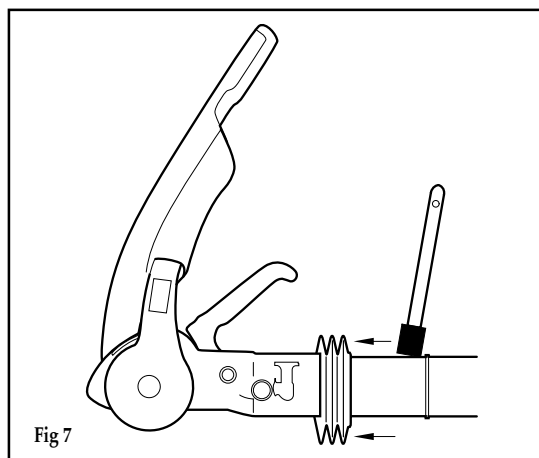


Fig 7

## 4.12.19 Jockey wheel

Lubricate wheel and screw thread periodically with grease.

## 4.12.20 Brake linkage

All moving parts should be lubricated periodically to ensure their satisfactory operation.

## 4.12.21 Corner steadies

The screw and pivot pins should be lubricated periodically to ensure their satisfactory operation.

## 4.12.22 Braking system adjustment

(At 500 miles, then every 3,000 miles or 1 year)

- i. Ensure the towing shaft with coupling heads is pulled fully forward (fig. 8).
- ii. Release the handbrake to the fully off position. If the handbrake will not go down the whole way because of the fairing or any other obstruction; then the fairing must be cut away and/or the obstruction removed to achieve this desired position. It will not be possible to set up the braking system properly when the handbrake is not in the fully off position (fig. 8).

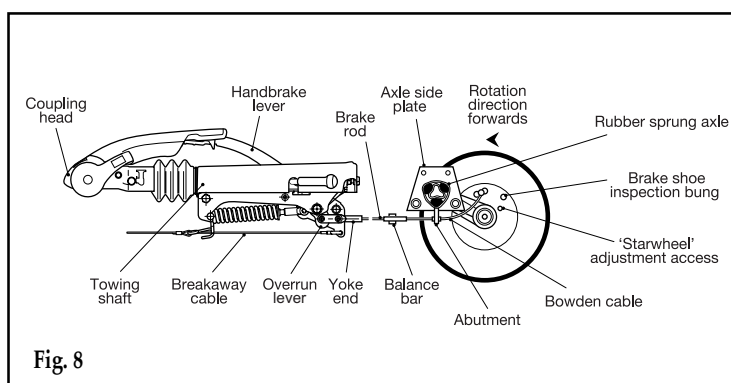


Fig. 8

- iii. Jack up one side of the caravan (see Jack Operation Instructions).
- iv. Remove the inner plastic bung from the backplate to expose the 'starwheel' adjuster access (figs. 8 & 9).
- v. Always rotating the road wheel in the forward direction - never backwards; adjust the starwheel with a suitable screwdriver, in the direction of the arrow embossed on the backplate until there is resistance in the wheel rotation (fig. 9).
- vi. Slacken off the starwheel adjuster until the road wheel turns freely in the forward direction (fig. 9).
- vii. Check the adjustment at the end of the brake cable where it is secured to the abutment (bracket) welded to the centre of the axle. When the inner cable is pulled out it should extend between 5 and 8 mm (fig. 8). (On tandem axles a double abutment is fitted to the front axle only).
- viii. Repeat for other wheel or wheels.
- ix. On tandem axles the brake cables from the rear axle should pass over this axle and cross over each other before being connected to the abutment on the front axle.
- x. Ensure the balance bar (compensation) is being pulled evenly. This bar (double on tandem axles) should always be paralleled with the axle tube when pulled (figs. 8 & 10). Adjust M8 lock and ball nuts, if necessary, to achieve correct parallel position (fig. 10).

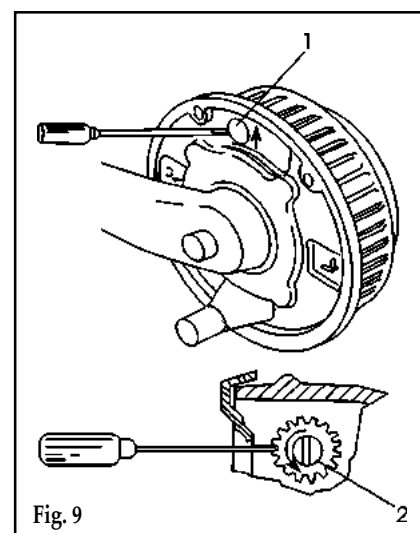


Fig. 9

- xi. Check the brake rod support bracket, (fixed to the floor) is supporting the brake rod evenly. The brake rod must always run straight, never bent or curved under any fittings. On tandem axles, using the double balance bar, a brake rod support tube (Part No. 228827) must always be fitted on the end of the brake rod, passing through the centre aperture on the abutment.

- xii. Remove the slack in the brake rod by adjusting the long ball nut, rear of the balance bar, ensuring the overrun lever makes contact with the end of the towing shaft.

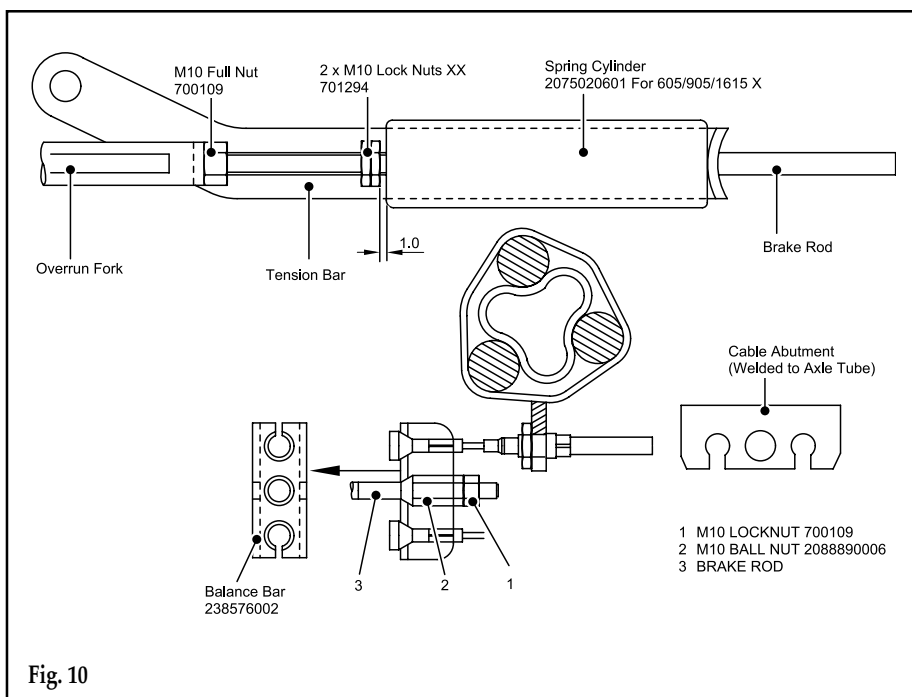


Fig. 10

Over adjustment to the long ball nut (Fig 10), could induce movement of the inner brake cable, reducing the effective clearance of the brake shoes. If the over run lever will not make contact, it is possible the two lock nuts, forward of the spring cylinder, are incorrectly adjusted. Loosen the nuts and adjust the brake rod as above (Figs 8 & 10).

- xiii. Adjust the two locking nuts, forward of the spring cylinder (fig. 10), (on some chassis a single Nyloc nut is used) to give 1mm of clearance on the spring cylinder. This cylinder (the energy store for the handbrake operation) must be able to rotate only, not slide on the brake rod.

(See Fig. 10). If the overrun assembly is fitted with a gas strut handbrake then no spring cylinder is fitted - therefore ignore this paragraph).

- xiv. Correct adjustment of the linkage is checked by operating the handbrake lever so that when the second or third tooth is engaged, a slight braking force is felt on the road wheels.

- xv. Over adjustment of either the wheel brakes or linkage, will result in difficult reversing causing the wheels to 'lock-up'.

- xvi. When parking, the handbrake lever must always be engaged into the fully upright position (90°). This is to compress the spring within the spring cylinder and thereby create an energy store, which will automatically engage the brakes further should the caravan move.

If difficulty is experienced in this operation, try easing the caravan backwards with one hand while engaging the handbrake fully with the other. This manoeuvre should not be attempted on a rearwards facing slope. In this case wheel chocks should be used combined with the handbrake.

- xvii. Finally, if the alloy road wheels have been removed, re-tighten using a calibrated Torque Wrench to 160 Nm (Newton Metres) (118 lb-ft) - on all M12 wheel bolts - in sequence, i.e. North, South, East, West not clock or anticlockwise. For the spare wheel supplied with the caravan the wheel bolts should be tightened to a torque of 120 Nm (88 lb-ft). Remember to overtighten is just as dangerous as to under-tighten, as this can distort the wheel rims. Avoid the use of power wrenches.



▲ The torque settings should be rechecked after 50km / 30 miles. Wheel bolts should never be lubricated.



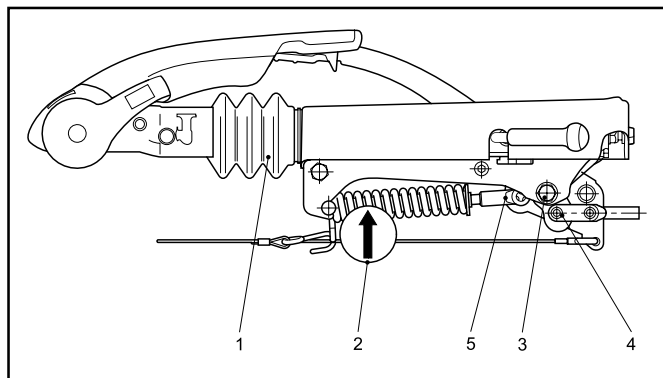
- ▲ In order to operate the Al-Ko braking system correctly adequate traction of caravan wheels is required when reversing. Therefore surface conditions that would result in a lack of traction should be avoided. Example: Peas, shingle/loose gravel.



- ▲ Care should be taken when traversing ramps or other obstacles in order to prevent damage to the caravan under gear. When approaching such obstacles reduce towing speed appropriately.

## 4.12.23 Chassis Lubrication Points

1. Grease the drawbar in the area of the bellows.
2. Grease the bearing bush through the grease nipples on the housing and the cartridge.
3. Grease the pivot bolt of the overrun lever and handbrake levers through the grease nipple.
4. Grease the joint of the brake rod and fitting.
5. Oil the joints of the spring cylinder in the handbrake lever.



Lubricant type: Multi-purpose grease to DIN 51825 KTA 3K4.

## 4.13 HEKI 2 ROOFLIGHT

### Operating Instructions



- ▲ Before commencing any journey always ensure that the Heki 2 rooflight is fully closed and both handles are securely fastened.

### 4.13.1 To open in the tilted position

- a) Press the knob in the toggle catches on either side of the glass and turn through approx. 90 deg.
- b) Grasp the metal bar in the middle, snap it out of its holder, swivel down and press the glass dome upwards. (Glass dome is held by the two gas springs after approx. 150mm).
- c) Swivel the metal bar towards the glass down and snap into its holder.

To close the glass dome, proceed with steps (a - c) in reverse order.

### 4.13.2 To open in the intermediate position

- a) Open the toggle catches on either side of the glass.
- b) Grasp the metal bar in the middle, snap it out of its holder, swivel down and press the glass dome outwards. (Glass dome is opened automatically after approx. 150 mm by the two gas springs).
- c) Open both fasteners and swivel the metal strap toward the intermediate position and pull the glass dome down until the metal strap is stopped by the fasteners.
- d) Safeguard the metal strap with both fasteners.

To close Heki 2, proceed with steps (a - d) in reverse order.

### 4.13.3 To open in the ventilation position

- a) Open the toggle catches on either side of the glass.

b) Using both hands on the two toggle catches, press the glass dome up about 2 cm and fasten the toggle catches in the corresponding setting.

To close Heki 2, proceed with steps (a - b) in reverse order.

#### 4.13.4 Closing the blinds

a) To close the blinds, take hold of the end rod (without rocker) in the recessed grip and engage in the opposite end rod (with rocker).



- ▲ In extremely bright sunshine, the black-out blind must only be closed two-thirds, and the pane must be set in the "continuous airing" position.

b) Select the required position (black-out / flyscreen) by moving both joined end rods together.

#### 4.13.5 Opening the blinds

a) Move blind (end rod with rocker) right to the outside.

b) Hold the recessed grip with one hand; with the other hand, press the rocker and move the blind back (do not let it recoil).



- ▲ Do not stand on the acrylic glass dome.
- ▲ Close Heki 2 completely before moving off.
- ▲ Do not leave your vehicle when Heki 2 is open.
- ▲ Please consult your local dealer if you have any problems or defects.
- ▲ Remove any snow/ice or dirt before opening the roof.
- ▲ Do not open when it rains or when there is a strong wind.

#### 4.13.6 Care Instructions

Please clean the acrylic panes with the Seitz Acrylic Cleaner.

Stains and light scratches on the acrylic pane can be removed by using the Seitz Acrylic Polish and the Seitz special polishing cloth.

Only use water and mild soap suds to clean the blinds.

The guarantee becomes null and void if these instructions are not followed.

## 4.14 TRACKER MONITOR

### Operating Instructions

Tracker Monitor for caravans is armed and disarmed by an alarm. Triggering the alarm siren does NOT generate an alert from the Tracker Monitor unit.

#### 4.14.1 To arm

To arm the Tracker Monitor system, press the button on the remote control once. The siren will bleep twice.

After 45 seconds the alarm system will arm. After a further five minute delay the Tracker Monitor system will arm.

The siren will be triggered if the caravan is towed, moved or lifted onto the back of a trailer. The siren will sound for five minutes unless stopped by the user. The Tracker Monitor sensor must detect movement over a longer period before it will send an alert. Therefore if the siren is triggered accidentally it will not send a false alert. The siren can also be triggered by a passive infrared detector (PIR) (optional, see your caravan dealer).

#### 4.14.2 To disarm

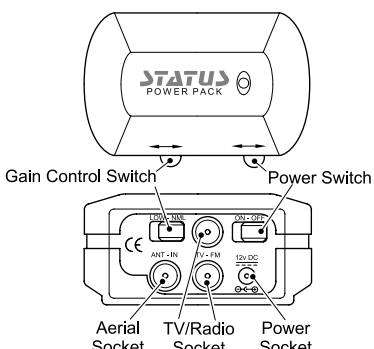
To disarm the Tracker Monitor system press the button on the remote control once. The siren will beep once and the Tracker Monitor system will disarm. If already sounding, the siren will be silenced.

Tracker Monitor is supplied with two remote control units. Additional units may be ordered from your caravan dealer.

#### 4.14.3 Winter storage

Before storing the caravan for winter, please ensure that the leisure battery is fully charged. Dependent on the battery's capacity and age, it will require recharging at intervals of between three to six months.

## 4.15 STATUS 530 DIRECTIONAL TELEVISION & FM RADIO ANTENNA



Frequency Range	UHF 470-860 MHz VHF 40-230 MHz FM 88 - 108 MHz
Antenna Forward Gain	7db
Amplifier Gain	18 db*
Gain Adjustment	15 db
Flatness	± 1.52 db
Noise Figure	3 db
Output Impedance	75 ohms
Output	98 dbuv
Power Supply	12-24V DC
Power Consumption	35 ma
TV lead	2 metres

### 4.15.1 Travelling

Do not travel:

With the Antenna raised.

With the Antenna set for vertical signals.

With the Telescopes extended.

When travelling adjust the antenna so that it points to the rear of the vehicle to reduce the possibility of damage when travelling.

The RED SPOT on the bottom of the mast indicates the front of the Antenna.

### 4.15.2 Operating the System

Firstly determine the approximate location of the nearest transmitter and whether the signals are horizontally or vertically polarised. For assistance ask your site operator or check other antennas in the vicinity.

1. Loosen the Mast Locking Collar and Wall Bracket and raise the antenna. Turn the mast to direct the antenna towards the TV transmitter. The RED SPOT on the bottom of the mast indicates the front of the Antenna.
2. When receiving vertically polarised signals, rotate the Winder anti-clockwise to cant the antenna through 90°. DO NOT over tighten or use undue force on the winder.  
DO NOT cant for vertically polarised signals with the TELESCOPICS EXTENDED.
3. Switch ON the power pack and the red LED will illuminate.
4. Check the gain control switch is set to normal - 'NML'.
5. Tune your television into the strongest signal. You may need to adjust the direction of the mast to achieve the best picture quality.
6. Secure by tightening the Mast Locking Collar and Wall Bracket.

### 4.15.3 VHF Television Reception (Overseas Only)

1. Extend the two telescopic antennas.
2. Tune your Television into the strongest signal. You may need to adjust the direction of the Antenna to achieve the best picture quality.
3. For fine tuning of VHF you may also need to adjust the length of the telescopes.

IMPORTANT - VHF TV transmissions are ONLY horizontally polarised.

#### 4.15.4 Fault Finding

The following are some of the key areas we suggest you check which generally solve the most common problems encountered with the operation of the Status antenna.

##### **Coaxial Plugs**

It is critical that all coaxial plugs in the system are fitted correctly. Please check each individual plug ensuring it is wired correctly. Secondly please ensure only quality plugs have been used.

##### **Coaxial Cable**

Sharp bends, kinks and hot surfaces can easily damage coaxial cable and should be avoided. An inspection of the cable routing is recommended to ensure all is correct. Coaxial cable, if placed in close proximity to electrical cables, transformers or other pieces of electrical equipment, may pick up electrical interference causing picture quality to deteriorate, especially in poor reception areas. Excess cable should be removed and NOT coiled as this may cause picture distortion.

##### **Gain Control Switch**

This switch should be set to the normal 'NML' position for general use. The Low setting may be used when situated close to TV transmitters where strong signals may be affecting the quality of the picture.

##### **Red LED Light**

Should the red LED on the Power Pack not light, first try unplugging the cable connected to the Antenna Dome from the 'ANT-IN' socket. If the LED then illuminates the fault lies with either the coaxial plug or the coaxial cable, please refer to these areas described earlier.

If the LED is still not lit, contact our office for further assistance.

##### **Short Hook up Test**

This test isolates parts of your system leaving only the TV and the Status antenna linked directly together.

Firstly, unplug the coaxial plugs from the 'TV-FM' sockets of the Power Pack which will be connected to a TV outlet socket.

With your TV fly lead, connect your TV direct to the Power Pack, plugging into one of the 'TV-FM' sockets.

Ensure the antenna dome is plugged directly into the 'ANT-IN' socket of the Power Pack and switch on. Tune in your TV for the strongest signal.

If the picture quality is improved the fault lies with the wiring of the system between the Power Pack and the TV outlet socket.

##### **Antenna Dome Coaxial Cable**

Check the routing of the coaxial cable from the Antenna Dome to the Power Pack. Check to ensure there are no kinks or trapped cable or if there are loops of surplus cable which could be affecting performance.



- ▲ It is the responsibility of the caravan owner to make sure that the directional aerial is fully retracted before the caravan is moved. Any damage as a result of neglect, i.e. not retracting the aerial, caused by crash damage, vandalism or incorrect operation will NOT be covered by the manufacturers warranty.

## 4.16 DAEWOO MICROWAVE OVEN

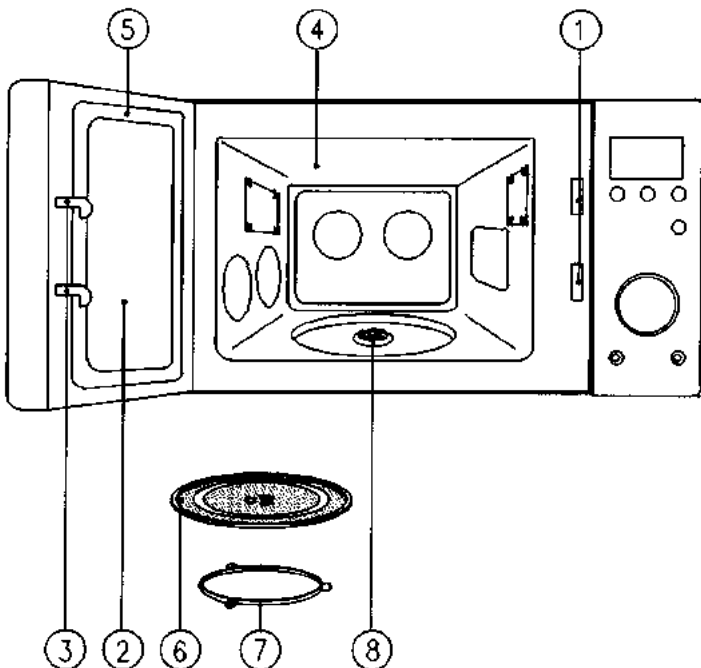
### 4.16.1 Precautions to avoid possible exposure to excessive microwave energy

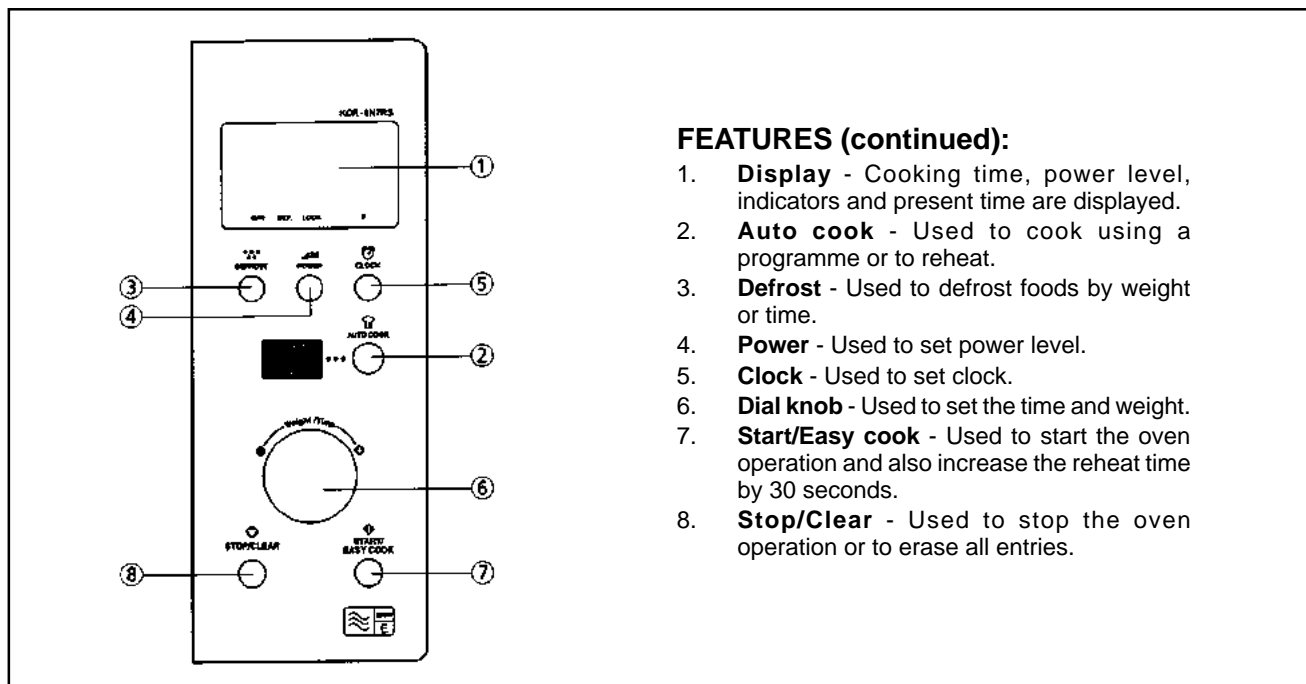


- ▲ Do not attempt to operate this oven with the door open since open-door operation can result in harmful exposure to microwave energy. It is important not to remove or tamper with the safety interlocks.
- ▲ Do not place any object between the oven front face and the door or allow soil or cleaner residue to accumulate on sealing surfaces.
- ▲ If the door or door seals are damaged, the oven must not be operated until it has been repaired by a competent person: (1) door (bent), (2) hinges and latches (broken or loosened), (3) door seals and sealing surfaces.
- ▲ It is hazardous for any one other than a competent person to carry out any service or repair operation which involves the removal of a cover which gives protection against exposure to microwave energy.
- ▲ Liquids or other foods must not be heated in sealed containers since they are liable to explode.
- ▲ The appliance is not intended for use by young children or infirm person without supervision. Young children should be supervised to ensure that they do not play with the appliance.
- ▲ Only allow children to use the oven without supervision when adequate instructions have been given so that the child is able to use the oven in a safe way and understands the hazards of improper use.

#### FEATURES:

1. **Safety interlock system** - Prevents the oven from operating while the door is opened. The oven will only operate with the door fully closed. When the door is open, the oven turns off and will only start again after the door is closed.
2. **Door screen** - Allows viewing of food. The screen is transparent to light, but prevents microwaves escaping.
3. **Door latch** - When the door is closed it will automatically shut off. If the door is opened while the oven is operating, the magnetron will automatically shut off.
4. **Oven cavity**
5. **Door seal** - The door seal surfaces prevent microwaves escaping from the oven cavity.
6. **Glass cooking tray** - Made of special heat resistant glass. The tray can be easily removed for cleaning. Make sure it is correctly positioned (indentation) before operating. Place food in a suitable container (dish) on the tray.
7. **Roller guide** - Supports the glass cooking tray.
8. **Coupler** - This fits over the shaft in the centre of the oven's cavity floor. This is to remain in the oven for all cooking.





### FEATURES (continued):

1. **Display** - Cooking time, power level, indicators and present time are displayed.
2. **Auto cook** - Used to cook using a programme or to reheat.
3. **Defrost** - Used to defrost foods by weight or time.
4. **Power** - Used to set power level.
5. **Clock** - Used to set clock.
6. **Dial knob** - Used to set the time and weight.
7. **Start/Easy cook** - Used to start the oven operation and also increase the reheat time by 30 seconds.
8. **Stop/Clear** - Used to stop the oven operation or to erase all entries.

## 4.16.2 Operational Procedure

This section includes useful information about oven operation.

1. Connect the mains lead to an electrical outlet.
2. After placing the food, in a suitable container, open the oven door and put it on the glass tray. The glass tray and roller guide must always be in place during cooking.
3. Shut the door. Make sure that it is firmly closed.
4. The oven light is on only when the microwave oven is operating.
5. The oven door can be opened at any time during operation by touching the door release button on the control panel. The oven will automatically shut off.
6. Each time a button is touched, a BEEP will sound to acknowledge the touch.
7. The oven automatically cooks on full power unless set to a lower power level.
8. The display will show “:0” when the oven is plugged in.
9. Time clock returns to the present time when the cooking time ends.
10. When the Stop/Clear button is touched during the oven operation, the oven stops cooking and all information retained. To erase all information (except the present time), touch the Stop/Clear button once more. If the oven door is opened during the oven operation, all information is retained.
11. If the Start button is touched and the oven does not operate, check the area between the door and door seal for obstructions and make sure the door is closed securely. The oven will not start cooking until the door is completely closed or the programme has been reset.



- ▲ Make sure the oven is properly installed and plugged into the electrical outlet.

### 4.16.3 Wattage Output Chart

The power-level is set by pressing the power button. The chart shows the display, the power level and the percentage of power.

Touch Power button	Power level (Display)	Approximate Percentage of Power
once	P-HI	100%
twice	P-80	80%
3 times	P-60	60%
4 times	P-40	40%
5 times	P-20	20%

### 4.16.4 Controls

#### Setting the Clock

When the oven is first plugged in, the display will flash “:0” and a tone will sound. If the AC power ever turns off, the display shows “:0” when the power comes back on.

1. Press Clock button. This is a 12 hour clock system.
2. Press Clock button once more. This is a 24 hour clock system.
3. Turn the dial knob to adjust hour.
4. Press Clock button.
5. Turn the dial knob to adjust minute.
6. Press Clock button.



▲ This oven has multiple clock systems. If you want 12 hour clock system omit this step.

If you selected 12 hour system, the display will show the hours from “1” to “12”.

If you selected 24 hour system, the display will show the hours from “0” to “23”.

The adjusted hour starts blinking.

The minute stops blinking and “00” starts blinking.

The display will show the minutes from “0” to “59”.

The adjusted minute starts blinking.



▲ When you press Clock button, the minute stops blinking, and the colon starts blinking. If you selected 12 hour clock system, this digital clock allows you to set from 1:00 to 12:59. If you selected 24 hour clock system, this digital clock allows you to set from 0:00 to 23:59.

#### 4.16.5 Weight Defrosting

“Weight Defrost” lets you easily defrost food by eliminating guesswork in determining defrosting time. The minimum weight for “Weight Defrost” is 200 gram and the maximum weight is 3,000 grammes. Follow the steps below for easy defrosting.

1. Press Defrost button (The DEF indicator and “0” appear and the g indicator starts blinking).
2. Turn the dial knob to adjust the defrosting weight (The display will show what you selected).
3. Press Start button.

When you press Start button, the g indicator disappears and the DEF indicator starts blinking to show the oven is in the DEFROST mode. The display counts down the time to show you how much defrosting time is left in the DEFROST mode. The oven beeps during the defrosting cycle to signal that the food needs to be turned or rearranged. When the defrosting time ends, you will hear 3 beeps.

#### 4.16.6 Time Defrosting

When TIME DEFROST is selected, the automatic cycle divides the defrosting time into periods of alternating defrost and stand times by cycling on and off.

1. Press Defrost button (The DEF indicator and “0” appear and the g indicator starts blinking).
2. Press Defrost button once more (The g indicator disappears and “0” is displayed).
3. Turn the dial knob to adjust the defrosting time (The display will show what you selected).
4. Press Start button.



▲ Your oven can be programmed for 60 minutes 00 seconds (60:00).

When you press Start button, the DEF indicator starts blinking to show the oven is in DEFROST mode. The display counts down the time to show you how much defrosting time is left in the DEFROST mode. The oven beeps during the defrosting cycle to signal that the food needs to be turned or rearranged. When the defrosting time ends, you will hear 3 beeps.

#### 4.16.7 Cooking in One Stage

1. Press Power button (select the desired power level). The M/W indicator appears and the display will show what you selected. If step 1 is omitted, the oven will cook at full power.
2. Turn the dial knob to adjust the cooking time. The display will show what you selected. (You oven can be programmed for 60 min 00 sec (60:00)).
3. Press Start button.

When you press Start pad, the M/W indicator starts blinking to show the oven is cooking. The display counts down the time to show how much cooking time is left. When the cooking time ends, you will hear 3 beeps.



▲ Using lower power levels increases the cooking time which is recommended for foods such as cheese, milk and slow cooking of meats.

### 4.16.8 Cooking in Two Stages

All recipes require frozen foods to be defrosted fully before cooking.

This oven can be programmed to automatically defrost foods before cooking.

1. Press Defrost button (The DEF indicator and "0" appear and the g indicator starts blinking).
2. Turn the dial knob to adjust the defrosting weight (The display will show what you selected).
3. Press Power button (Select the desired power level x3). The M/W indicator appears and the display will show what you selected. This example shows power level 6.
4. Turn the dial knob to adjust the cooking time (The display will show what you selected).
5. Press Start button.

When you press Start button, the DEF and M/W indicators come on to confirm the power levels selected. The DEF indicator starts blinking to show you that the oven is in DEFROST mode. The display counts down the time remaining in DEFROST mode. When the oven beeps, turn over, break apart and/or redistribute the food. At the end of DEFROST mode, the oven will beep and start M/W cook. The DEF indicator disappears and the M/W indicator starts blinking. The display counts down the time remaining in M/W mode. When M/W cook ends, you will hear 3 beeps.

### 4.16.9 Easy Cooking

EASY COOK allows you to reheat for 30 seconds at 100% (full power) by simply pressing the Easy Cook button.

1. Press Easy Cook button (When you press Easy Cook button, ":30" appears. After 1.5 seconds, the oven starts reheating. When the cooking time ends, you will hear 3 beeps.

### 4.16.10 Auto Cook

AUTO COOK allows you to cook or reheat many of your favourite foods by repeatedly touching Auto cook button.

1. Press Auto cook button (When you press Auto Cook button once, "AC-1" is display. By repeatedly pressing this button, you can select one of the four menu programmes as shown in the chart below).
2. Turn the DIAL KNOB to adjust the desired quantity (This display will show what you selected).

Food	Press Autocook button	Display	Weight	Directions
Dinner Plate	once	AC-1	350g-450g	Put foods on the microwave plate and cover with vented plastic wrap.
Soup	twice	AC-2	350g-450g	Pour soup in microwave bowl or mug. Stir before serving.
Beverage	three times	AC-3	1 Cup (200ml) 2 Cups (200ml x2) 3 Cups (200ml x3)	Pour beverage in microwave mug and place it on turntable. Do not cover. Stir before serving.
Fresh vegetable	four times	AC-4	200g-400g	Wash and put in casserole. Add no water if vegetables have just been washed. Cover tender vegetables with lid and stir after cooking.

3. Press Start button (When you press Start button, the display changed into cooking time and the oven starts cooking. When the cooking time ends, you will hear 3 beeps.

#### 4.16.11 Child Safety Lock

SAFETY LOCK prevents unwanted oven operation such as by small children. To set, press and hold Stop/Clear button for 3 seconds. Lock indicator appears and a beep sound. To cancel, press and hold Stop/Clear button for 3 seconds. Lock indicator disappears and a beep sounds.

#### 4.16.12 To Stop The Oven While The Oven Is Operating

1. Press Stop/Clear button.

- You can restart the oven by pressing Start button.
- Press Stop/Clear button once more to erase all instructions.
- You must enter in new instructions.

2. Open the door

- You can restart the oven by closing the door and pressing Start button.



▲ Oven stops operating when door is opened.

#### 4.16.13 Microwave Specifications

Power supply	230V AC 50Hz Single Phase with Earthing
Power consumption	1200W
Output Power	800W
Frequency	2450 MHz
Outside dimensions (W x H x D)	465 x 279 x 360mm
Cavity dimensions (W x H x D)	290 x 220 x 306mm
Net weight	Approx 12.2kg
Timer	60 min. 00 secs.
Power levels	5 Levels

#### 4.16.14 Before You Call For Service

Refer to the following checklist, you may prevent an unnecessary service call.

- *The oven doesn't work*

1. Check that the power cord is securely plugged in.
2. Check that the door is firmly closed.
3. Check that the cooking time is set.
4. Check for a blown circuit fuse or tripped main circuit breaker in your house.

- *Sparkling in the cavity:*

1. Check utensils. Metal containers or dishes with metal trim should not be used.
2. Check that metal skewers or foil does not touch the interior walls.

If there is still a problem, contact the service station.

#### 4.16.15 Questions and Answers

Q: I accidentally ran my microwave oven without any food in it. Is it damaged?

A: Running the oven empty for a short time will not damage the oven. However, it is not recommended.

Q: Can the oven be used with the glass tray or roller guide removed?

A: No. Both the glass tray and roller guide must always be used in the oven before cooking.

Q: Can I open the door when the oven is operating?

A: The door can be opened anytime during the cooking operation. Then microwave energy will be instantly switched off and the time setting will maintain until the door is closed

Q: Why do I have moisture in my microwave oven after cooking?

A: The moisture on the side of your microwave oven is normal. It is caused by steam from cooking food hitting the cool oven surface.

Q: Does microwave energy pass through the viewing screen in the door?

A: No. The metal screen bounces back the energy to the oven cavity. The holes are made to allow light to pass through. They do not let microwave energy pass through.

▲ Do not attempt to service the oven yourself!

## 5.1 GENERAL MAINTENANCE

### 5.1.1 Exterior

The exterior of your caravan is very durable and easy to clean owing to its high gloss properties. To maintain a showroom finish one needs only to wash the caravan regularly with a car shampoo, rinse with cold water and chamois leather off. Do not forget to clean the roof. A good quality non metallic and non-coloured car wax that does not contain white spirit may be applied, which will make washing easier.



- ▲ Under no circumstances use any abrasive agents, methylated spirit, white spirit, other solvents or washing up liquid to the exterior of your caravan.
- ▲ No touch up painting should be carried out prior to consulting with a Bailey Service Centre for approved methods.

All items stored in the gas bottle storage locker must be secured to prevent impact damage to the inside of the front body panel when the caravan is being towed.



- ▲ Do not allow any chemicals, toilet or otherwise, to spill or leak onto the gas box floor. Before placing items in the cradle ensure that the tray is clean and free from any debris. Cleaning should only be carried out with warm soapy water.
- ▲ The use of high pressure water jets to clean your caravan will invalidate your warranty.

### 5.1.2 Acrylic Windows

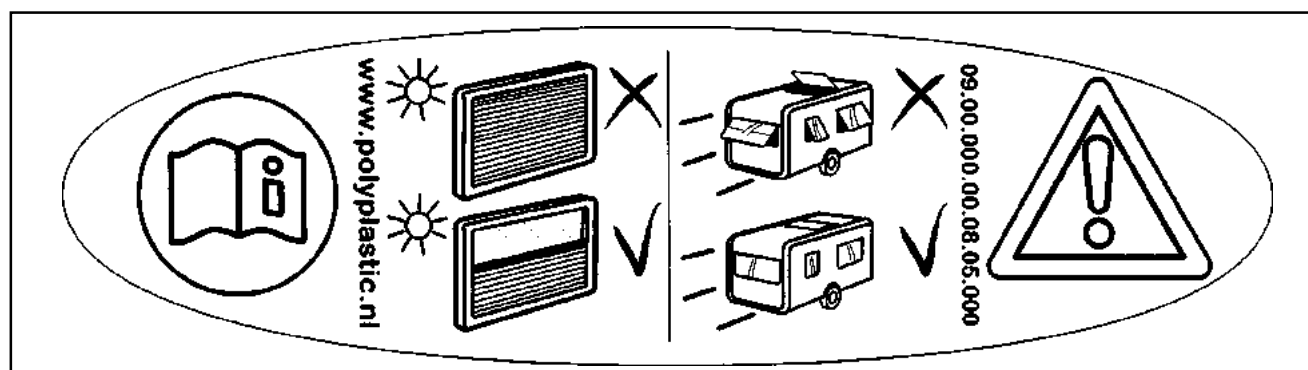
The windows fitted to your Bailey caravan are manufactured from high quality acrylic using the latest plastic processing methods.

For cleaning, use only generous amounts of water to wash away dust and road grit etc. Then use a soft cloth and warm soapy water and gently remove the remaining dirt. Avoid abrasive cleaning materials and detergents.

As with all plastic materials, acrylic should not be allowed to come into contact with chemicals such as paint remover, fly spray, acetone, dish washer detergent and car cleaning detergent.



- ▲ Never polish with a dry cloth.
- ▲ During high sun do not close the window blinds completely and open the windows into the ventilation position.
- ▲ While the caravan is in motion please ensure that the windows are fully closed (this information is also detailed on the stickers in the windows).



- ▲ Dependant on the temperature inside the caravan to that outside, condensation may be experienced between the window panes. This is a perfectly normal occurrence as the windows are not sealed units. To disperse condensation remove the small bungs, using a pair of blunt end tweezers, in the corners of the window unit (preferably on a warm day) until the condensation disperses and then replace the bungs.

### 5.1.3 Window Catches and Stays

Turn catch arm to the vertical position to open. A night vent position is available by depressing the locking knob and locating the catch into the outer catchplate slot.

The windows are held open by an adjuster knob, tightening off the knob in a clockwise direction will hold the window open in the desired position.

Always ensure knob is unscrewed before closing the window. Failure to do so may cause damage to the window stay arm.



- ▲ Always ensure that windows are fully closed during wet weather and not on night vent setting.

### 5.1.4 Interior walls

The interior walls have a GRP/PVC lining which should not require cleaning too often. A wipe over with a damp cloth and a very mild detergent is all that is needed to keep it immaculate.

### 5.1.5 Furniture

Moisture in air can cause damage to furniture as the wood expands or contracts with an increase or decrease in the relative humidity. A relative humidity of between 40% - 60% is tolerable. If values are maintained outside this range for a sustained period damage to the furniture may occur.



- ▲ To prevent damage, assure the relative humidity of air is not too high for a long period by either ventilating the caravan, or by using either a dehumidifiers or water absorbent crystals.

To ventilate your caravan, on dry days open as many windows and roof lights as possible to allow air to move through the vehicle. Try to do this as often as possible (at least once a week), but keep windows and roof lights closed on wet days as damp air may increase indoor humidity.

Humidity levels can also be controlled by reducing the level of activity that generates moisture in the air, e.g. taking showers, cooking and washing dishes.



- ▲ It is recommended that you use protective covers to prevent damage to the furniture surfaces from high temperatures.
- ▲ The use of some detergents or chemical cleaners on your furniture may damage the finish.
- ▲ Do not leave furniture surfaces wet with beads of standing water

### 5.1.6 Mattresses

Mattresses are made from fire retardant fabric and are C.M.H.R. foam filled.

Cotton print cushion covers are removable for dry cleaning only. (Zips along back edge.)

It is recommended that mattresses be stored on edge during winter.

### 5.1.7 Care of your upholstery

In the manufacturing of the fabrics used on the soft furnishings of your caravan a silicone coating is applied to help resist dirt and liquids.

However if a liquid is spilt the following actions are required:

- Remove as much excess as possible with a dry clean cloth.
- Sponge the affected area with warm soapy water taking care not to soak the material.
- Leave to dry in normal conditions.

These actions will not affect the FR treatment of the fabric.

Heavy soiling will require professional cleaning.

### 5.1.8 Curtains

All fabrics will fade to some degree if exposed to direct sunlight, particularly natural fibres such as cotton etc.



- ▲ Curtains should not be left closed during daytime otherwise some fading will be experienced.

Dry cleaning only recommended.



- ▲ No Ethylene based cleaning material must be used.

### 5.1.9 Hinges and Catches

Lightly oil occasionally.

Carpets

Vacuum periodically to remove grit and to ensure long life.

### 5.1.10 Shower/Vanity Units

#### Care instructions

Exposure of this product to cleaning products or material containing concentrated perfumes, body oils, linseed oil, gritty or abrasive substances, solvents (white spirit, antifreeze etc) may result in permanent damage to the material.

Cleaning should be carried out immediately after use using warm soapy water and a soft cloth. Stubborn stains may be removed using diluted lemon juice.

Thetford bathroom cleaner is suitable for cleaning the shower and vanity unit plastic items (sinks, shower trays, thetford toilets etc).



- ▲ Domestic cleaning products are not to be used to clean the shower/vanity unit plastic items.
- ▲ Some mouth washes can cause plastic items to crack and for this reason should not be used.

### 5.1.11 Guidance on Cleaning Portable Water Tanks and the Water System and in Touring Caravans

The water systems, and in particular storage tanks, in caravans are susceptible to contamination by bacteria if care is not taken with their use and cleaning. The symptoms caused by bacterial contamination are not purely limited to gastro-intestinal diseases, but may also manifest themselves as ear, nose, throat, eye or skin infections. It is therefore important that you carry out the following procedure prior to using the caravan each time, even if you boil or filter all water you use for drinking.

### 5.1.12 For Containers

1. All water remaining in the container should be disposed of so that the container is empty. (If the container is an onboard tank, it should be removed if possible.)

2. The outside of the container should be thoroughly cleansed and washed down to remove any dirt, dust or other contaminant. Water at a suitably hot temperature containing an appropriate detergent is recommended for this purpose.
3. Water should be put in the container, swirled around, then emptied out.
4. The container should then be totally filled with water containing an appropriate disinfectant/sterilant solution and allowed to stand for the recommended contact time (e.g. Milton for 15 minutes).
5. The solution should be emptied from the container.
6. The opening of the container should be cleaned thoroughly with an appropriate pre-prepared wipe impregnated with a disinfectant/sterilant.
7. The container should be inverted whilst stored overnight (if possible).
8. The container must be filled with mains water only and mains water only should be used for the above cleaning procedure.
9. On no account should garden hoses be used to fill water tanks.

### 5.1.13 For Systems

1. Drain down the system. Open all taps and valves to allow air in enabling the system to drain quickly.
2. Remove any water filters fitted, and replace with a short length of hose or empty filter cartridge (this will ensure the filter is not affected by the disinfectant/sterilant solution).
3. Fill the system by using the pump with a disinfectant/sterilant solution. (Check that the solution at full strength appears at all taps/showers.) Allow to stand for the recommended period of time.
4. Drain the system down completely.
5. Thoroughly clean the outside of all taps/connections with a cloth soaked in the disinfectant/sterilant.
6. Flush the system through with clean drinking water until no traces of disinfectant/sterilant can be detected at any tap.
7. Replace the filter

Suitable sterilising chemicals are available from your caravan dealer, accessory shop, chemists or home-brew shops. It is not, however, recommended to use bleach or sodium metabisulphite.

This guidance has been prepared with the kind co-operation and assistance of The Environmental Health Department of The Borough Council of King's Lynn and West Norfolk.

### 5.1.14 Caravan Keys

Each Unicorn model is fitted with a high security lock and is supplied with two identical keys. In the event of both keys being lost these cannot be replaced. In this instance a new lock will have to be fitted with a fresh set of keys. Each model is also supplied with two standard keys which are for use on the other exterior access doors.

## 5.2 FIRE AND SAFETY PRECAUTIONS



- ▲ Your attention is drawn to the notice affixed in the caravan advising on fire prevention, ventilation and what to do in case of fire. Ensure that the occupants are familiar with escape routes, in case of a fire.

### 5.2.1 Children



- ▲ Do not leave children alone in the caravan in any circumstances. When in the caravan ensure that children are supervised at all times. Keep potentially dangerous items out of reach as at home, e.g. matches, medicines etc.

### 5.2.2 Fire Extinguishers

Provide one dry powder fire extinguisher of an approved type or complying with ISO 7165 of at least 1 kg capacity by the main exit door, and a fire blanket next to the cooker. Familiarise yourself with the instructions on your fire extinguisher and the local fire precaution arrangements.

A fat pan fire should not have an extinguisher aimed at it but be smothered with a fire blanket. It is advisable not to cook with a fat pan or deep fryer in the enclosed space of a caravan.

Extinguishers containing vaporising liquids should not be used by a person inside the caravan or from outside whilst other persons are in the caravan. Dry powder extinguishers will deal with fat or electrical fires and water type extinguishers should not be used for this type of fire.

### 5.2.3 In Case of Fire

- Get everyone out of the caravan as quickly as possible using whichever exit is quickest including windows. Do not stop to collect any personal items.
- Raise the alarm - Call the Fire Brigade (in the UK dial 999).
- Turn off gas container valve if safe to do so.

### 5.2.4 Smoke Alarms



- ▲ Your caravan is fitted with a smoke alarm. The operation of the alarm should be tested after the vehicle has been in storage, before each trip and at least once per week during use.

### 5.2.5 Ventilation

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

High level ventilation is via the roof lights. The mesh screens fitted should be kept free of obstructions by dust, leaves, insects, etc. Inspect regularly and use a brush and soapy water as necessary.



- ▲ Under no circumstances should the caravan ventilation be covered, blocked or tampered with in any way.

### 5.2.6 Petrol/Diesel Fumes

The fitting of a tail pipe deflector to your exhaust will reduce the possibility of fumes entering your caravan through the front fixed ventilation points. However, an extension fitted to an exhaust tail pipe will be illegal if it projects excessively beyond the vehicle body or bumper.

### 5.2.7 Original Equipment Appliances

See sections devoted to individual appliances.



- ▲ Replacement parts for any appliance shall conform to the appliance manufacturer's specification; and should be fitted by them or an authorised agent.

### 5.2.8 Portable Appliances



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

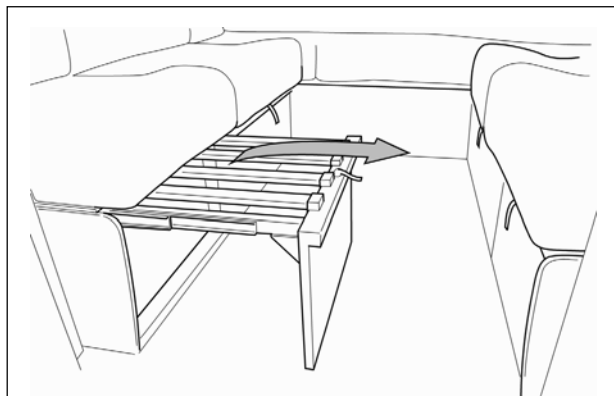
### 5.2.9 Modifications



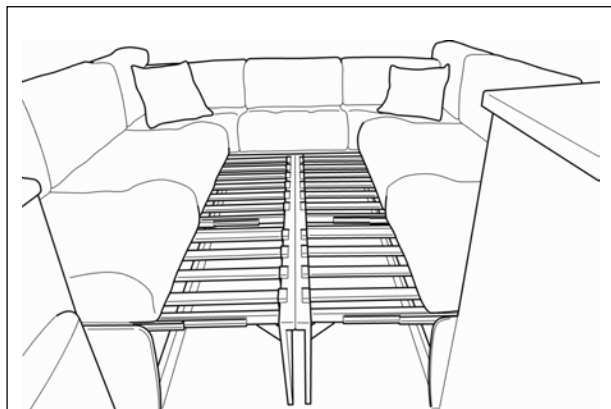
- ▲ Never allow modification of electrical or LPG systems and appliances except by qualified persons.

## 5.3 BUNK ASSEMBLY

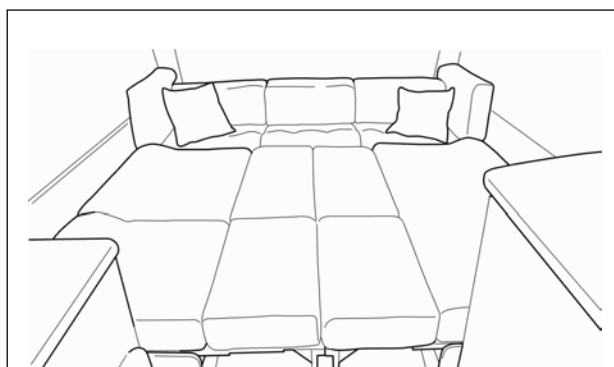
### 5.3.1 Front bunk assembly



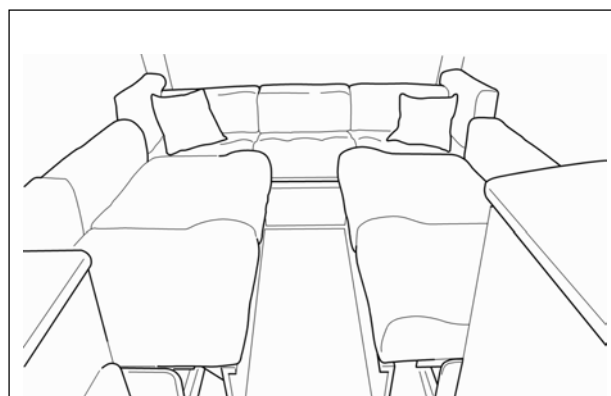
**Step 1** To make up the front bunks, lift the bed box front to clear the caravan carpet using the fabric tab and extend the pull out unit into the centre of the caravan.



**Step 2** To make a full double extend all pull out units to their maximum limit.

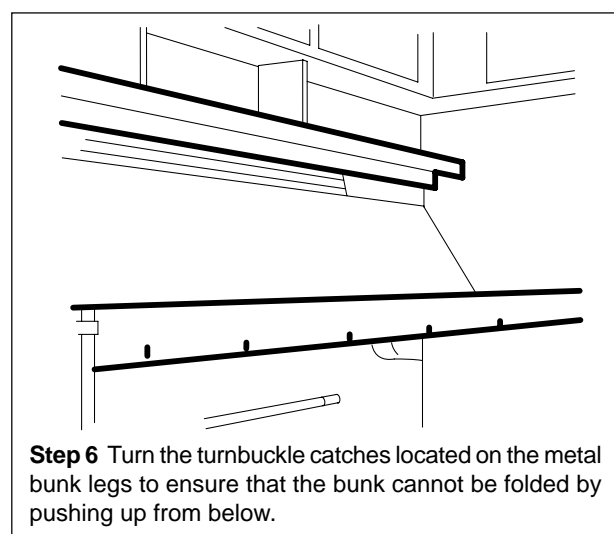
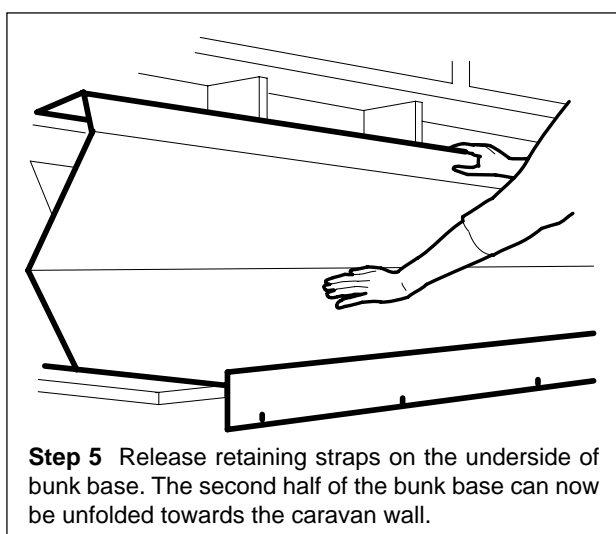
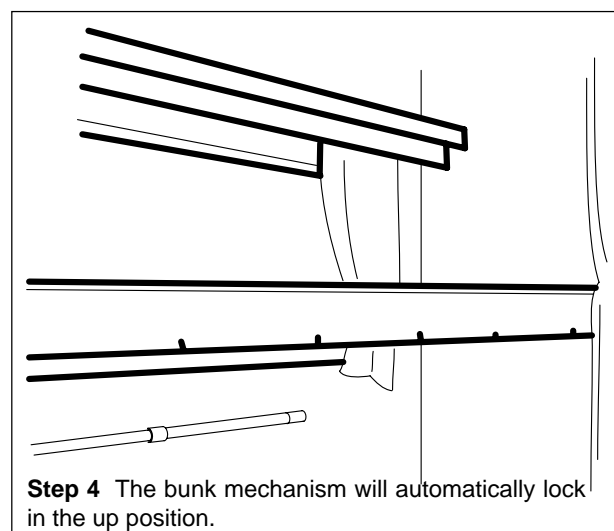
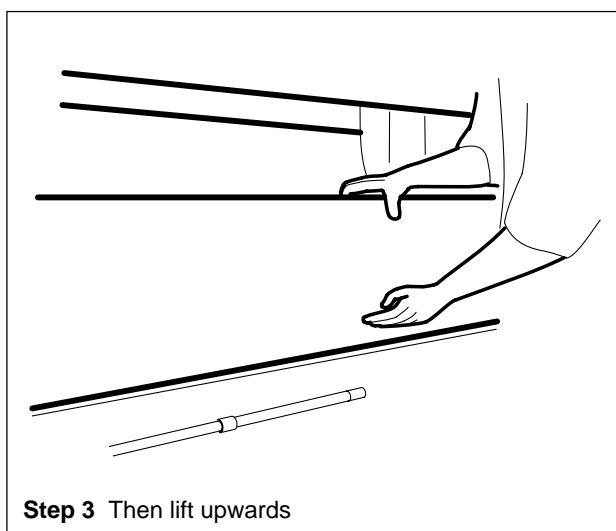
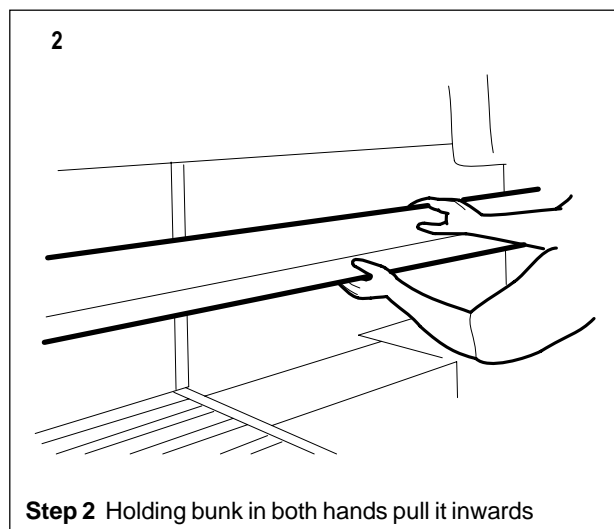
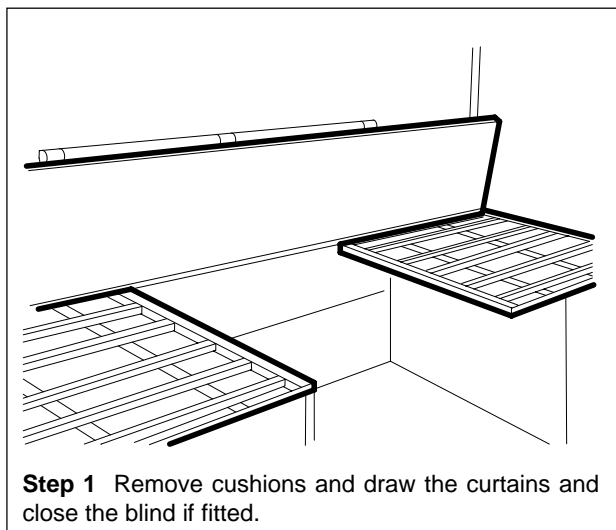


**Step 3** Arrange cushions accordingly to complete bed make up. For ease of operation it is recommended that you start with the front pull out units and work backwards towards the centre of the caravan.



**Step 4** To make two singles extend all pull out units half way, pull the base cushions forward and drop the backrests behind them.

### 5.3.2 Side dinette top bunk assembly



**Step 7** The safety rails and ladder can now be slotted into position.

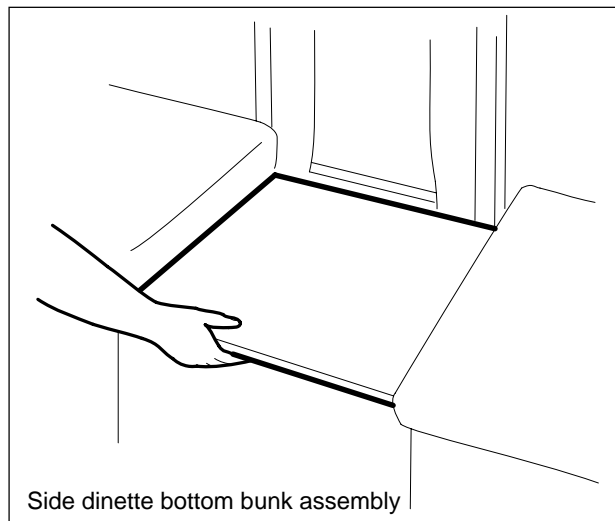
**Step 8** Check the security of the bunk and replace the cushions before allowing a person to use the bunk.

### 5.3.3 Side Dinette Bottom Bunk Assembly

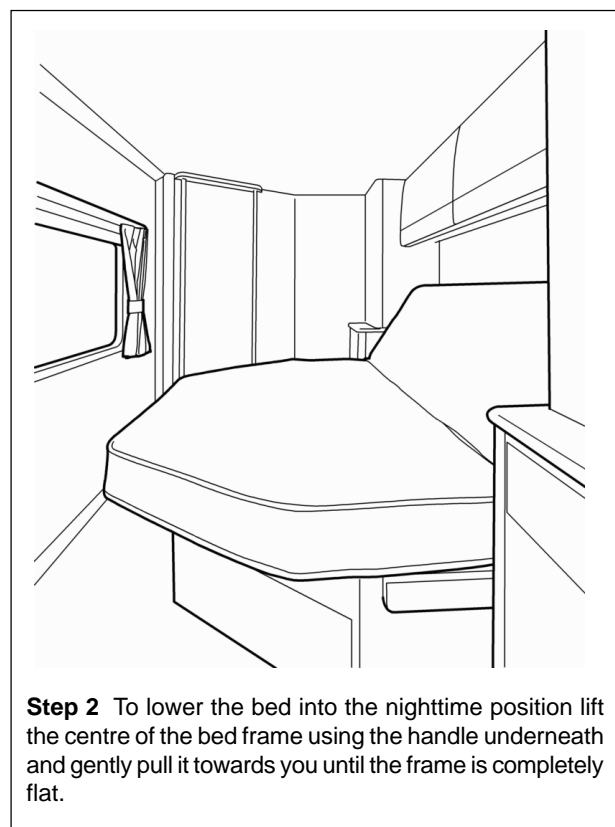
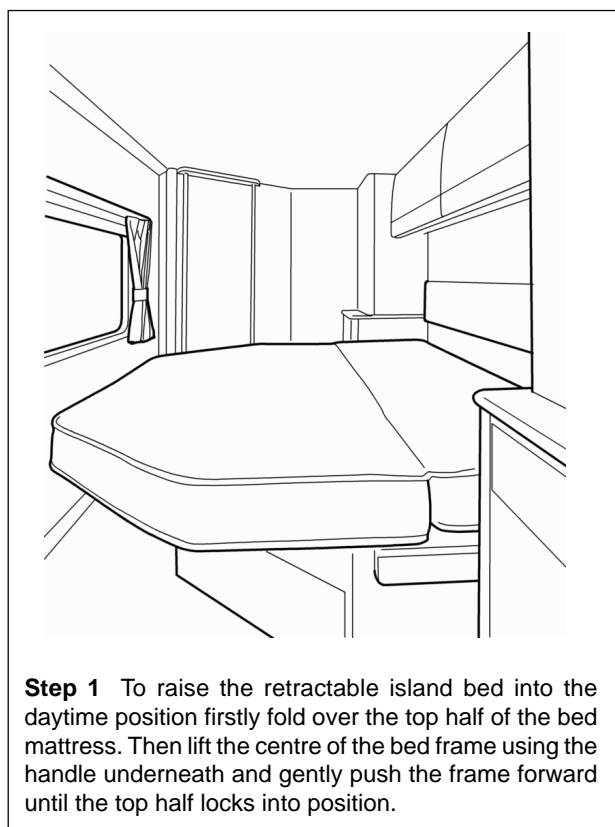
- i. Remove table from support leg.
- ii. Place the table top between seats on ledge.
- iii. Arrange seat cushions as appropriate.



▲ When children, especially those under 3 years of age, use any bunk/bed care must be taken against the risk of them falling out.



### 5.3.4 Retractable Island Bed Assembly



## 5.4 WATER SYSTEM - FAULT FINDING

### 5.4.1 FAULT - *Water not flowing from any tap when operated but pump runs*

Cause	Cure
Water source empty	Check water level and re-fill if necessary
Pump wired in reverse	Check wiring, refer to pump manufacturers' instructions
Pump not primed	Refer to pump manufacturers' instructions
Pipe inlet or outlet pipe disconnected	Check connections
Pump pipes restricted by kinking	Check pipe runs
Blockage in pump inlet or outlet pipe	Check, starting inside freshwater tank
Blocked in-line filter or pump filter	Replace filter
Air leak in suction line to pump	Check for bubbles & secure with a clip

### 5.4.2 FAULT - *Pump does not run*

Cause	Cure
Pump or tap incorrectly wired	Refer to pump/tap manufacturers' instructions
Pump fuse blown	Check wiring connections and then replace with fuse of correct rating
Battery disconnected	Check connections
Pump seized or overheated	Refer to pump manufacturers' servicing instructions
If a pressure pump is being used, pressure sensing switch may have failed	Refer to tap manufacturers' servicing instructions
If a switched tap is being used, the switch have failed	Refer to pump manufacturers' servicing may instructions

### 5.4.3 FAULT - *Water flows from cold tap but has reduced flow from hot*

Cause	Cure
Feed pipe to water heater incorrectly connected to the heater outlet	Refer to installation instructions
Blockage in hot pipeline	Disconnect pipes and inspect
Heater inlet or outlet pipes kinked preventing flow	Check and re-route if necessary. Ensure that hose is Carver recommended type
Hot tap not connected	Refer to installation instructions
Hot tap failed or blocked	Disconnect and inspect
Heater non-return valve jammed	Seek service attention

#### 5.4.4 FAULT - *Water flows from hot tap but has reduced flow from cold*

Cause	Cure
Cold water pipe kinked preventing flow	Check and re-route if necessary
Blockage in cold pipe line	Disconnect pipes after 1st Y connector and check up to tap
Cold tap not connected	Refer to installation instructions
Cold tap failed or blocked	Disconnect and inspect
If a Carver Crystal water service unit is fitted the cartridge is exhausted	Replace cartridge

#### 5.4.5 FAULT - *Reduced flow from both hot and cold taps*

Cause	Cure
Battery condition low causing pump to run slowly	Check battery state of charge refer to electrical supply note
If new taps have been fitted they may be restricting flow	Disconnect and check that they have at least Ø (6.3mm) bore
Pump needs servicing	Refer to pump servicing instructions
Partially blocked pump filter or in-line filter, if fitted	Replace filter
Pump outlet pipe kinked restricting flow	Check and re-route if necessary
Water leak	Check all water connections

#### 5.4.6 FAULT - *Reduced flow from either taps*

Cause	Cure
'Y' connector(s) fitted incorrectly	Refer to installation instructions
Pipe kinking restricting flow	Check and re-route if necessary
Bore size difference in taps	Use taps of equal bore size

#### 5.4.7 FAULT - *Water Heater pressure relief valve venting water*

Cause	Cure
Pressurised water system pump switching pressure too high	Refer to water supply note
Switched tap water system pump flow rate is greater than tap flow rate capacity	Refer to water supply note

#### 5.4.8 FAULT - *Water heater difficult to drain*

**Cause**

Hot taps not open preventing air entering hot system to let water out.

Air bleed pipe kinked or blocked.

**Cure**

Open taps

Unkink or unblock pipe.

## 5.5 BRAKE FAULT FINDING CHART - AL-KO

### 5.5.1 FAULT - *Braking is one-sided*

Cause	Cure
Incorrect adjustment at wheel.	Adjust as described.
Brake cable seized.	Free off cable or replace.
Brake lining contaminated with grease.	Replace brake shoe assemblies.

### 5.5.2 FAULT - *The trailer brakes during mild decelerations*

Cause	Cure
Shock absorber in overrun device weak or ineffective.	Examine and replace if necessary.
Brakes overadjusted.	Re-adjust as described.

### 5.5.3 FAULT - *The trailer brakes snatch when braking*

Cause	Cure
Brakes overadjusted.	Re-adjust as described.
Brake cable sticking.	Examine, free off cable or replace.
Brakes under adjusted.	Check complete brake transmission system and re-adjust if necessary.
Shock absorber weak or ineffective.	Replace.
Drawshaft sticking.	Check over full stroke, lubricate if necessary.

### 5.5.4 FAULT - *Brake judder*

Cause	Cure
Linings contaminated with grease.	Replace brake shoe assemblies.
Failure of bond between lining and shoe.	Replace brake shoe assembly.
Distorted/cracked drum.	Replace.
Drums have rusty patches on braking surface.	Clean up with sandpaper and wipe out with meths.

### 5.5.5 FAULT - *Trailer brakes lock up when reversing*

Cause	Cure
Brakes overadjusted.	Re-adjust as described.
Reverse lever not functioning.	Check action and rectify.
Ground surface too soft or slippery.	Cover immediate area with matting or similar firmer product.

### 5.5.6 FAULT - *Trailer brakes inoperative*

**Cause**

Brakes underadjusted.

Lining contamination.

Seized cables.

Linings worn out.

**Cure**

Check action and rectify.

Replace brake shoe assemblies.

Free off or replace.

Replace brake shoe assemblies.

### 5.5.7 FAULT - *Hot brakes*

**Cause**

Brakes overadjusted.

Pull-off spring broken.

Seized cables.

**Cure**

Re-adjust as described.

Replace spring.

Free off or replace.

### 5.5.8 FAULT - *Handbrake will not hold trailer on slope*

**Cause**

Incorrect adjustment at spring cylinder.

**Cure**

Re-adjust as described.

## 5.6 REFRIGERATOR - FAULT FINDING

### 5.6.1 FAULT - *No 230V fridge operation*

**Cause**

230V socket that the fridge is plugged into not connected or switched on.

**Cure**

Usually located either under the oven or in the front bunk. Check plug is located correctly and turn on the switch.

## 5.7 TRACKER - FAULT FINDING

### 5.7.1 GENERAL QUESTIONS

**Q How does the system work?**

A Tracker monitor for caravans is armed and disarmed by an alarm. Triggering the alarm siren does NOT generate an alert from the Tracker monitor unit.

To arm the Tracker Monitor system, press the button the remote control once. The siren will beep twice.

After 45 seconds the alarm system will arm. After a further 5 minute delay the Tracker monitor system will arm.

The system will be triggered if the caravan is towed, moved or lifted onto the back of a trailer. The siren will sound for five minutes unless stopped by the user. The Tracker monitor sensor must detect movement over a longer period before it will send an alert. Therefore if the siren is triggered accidentally it will not send a false alert. The siren can also be triggered by a passive infrared detector (PIR).

To disarm the Tracker monitor system press the button on the remote control once. The siren will beep once and the Tracker monitor will be disarmed. If already sounding the siren will be silenced.

**Q I have been pushing my caravan around the car park and the alarm has not gone off?**

A Please see above.

**Q I set the alarm and went for a drive, the siren went off but Tracker has not telephoned me?**

A If you started driving before the 5-minute arming time has expired then the system will not send an alert to Tracker.

Please refer the first question.

**Q If Tracker telephones me and I am at home why do I need to check my caravan? I keep it at a secure compound so it must be safe or stolen so why cannot they track it?**

A Tracker can only activate on receipt of the crime reference number and confirmation of theft.

**Q The alarm keeps sounding and Tracker do not telephone me?**

A The alarm sounding will not trigger the Tracker, which needs acceleration of the caravan to trigger. Think of it as a two separate systems within one; an alarm system and a stolen vehicle recovery system.

**Q I am changing my caravan and it does not have a Tracker system, can I take it out and fitted to my new one?**

A No, it is not possible to transfer it to another caravan.

**Q Will my Tracker system work in France?**

A Yes the Tracker System works in England, Scotland, Wales, Northern Ireland, France and Spain.

**QUESTIONS RELATING TO POWER:**

**Q Will the Tracker battery recharge?**

A Yes, the TRACKER battery is a sealed battery and will recharge when the leisure battery is being recharged in situ on the caravan.

**Q Will the Tracker system work if the leisure battery is disconnected?**

A With your leisure battery removed then the Tracker system will have a battery life of approximately two weeks, after that the Tracker battery will be flat. You must keep the leisure battery connected and fully charged.

**Q What do I do if the leisure battery has been disconnected or never connected since the caravan was delivered from the manufacturer?**

A At the first opportunity you must fit a charged leisure battery and connect to a mains hook up. This will enable your Tracker battery to recharge.

**Q My caravan is in secure storage on a farm/ compound. Do I need to check my leisure battery?**

A Yes, you must check the charge of your battery and recharge if required. This will depend on your leisure battery's capacity, age and state of charge. This will be required at intervals of between 3 to 6 months.

**Q How long will the Tracker system work if the caravan is not connected to a mains supply?**

A Please see above question.

**Q How do I know if my Tracker battery is fully charged?**

A Your Tracker battery will be fully charged as long as you have not had a flat leisure battery and you at regular intervals of between 3 to 6 months connect to a mains hook up.

**Q My leisure battery went flat; do I need to do anything?**

A Yes, you must charge the leisure battery by connection to a mains hook up. This must be connected for 24 hours. This will charge the Tracker battery.

**Q How long will the Tracker work from my leisure battery?**

A With a 90Amp hour battery it will last for approximately 6 months. Like any other battery, this figure can only be offered as an approximate due to Tracker having no control over battery deterioration, usage, natural conditions etc.

**PIR QUESTIONS**

**Q Can I have a second PIR fitted?**

A Yes, you can have any number of PIR's fitted. They will need to be programmed to your Tracker, please refer to your dealer.

**Q Does the PIR cause the Tracker system to go off?**

A No, the PIR will only make the siren sound. It will not trigger the Tracker monitor system to send an alert.

**Q The PIR has a red light on it, my children are kept awake at night can I switch it off?**

A No, the warning LED indicates that the unit is working and cannot be switched off.

**Q I keep dogs in my caravan and the alarm keeps going off, can I switch off the PIR?**

A No, this is not a feature of the system and will always be working.

**Q The PIR is making a funny noise why?**

A The PIR has a low battery warning tone. If this is sounding then the battery requires replacement.

**Q What battery is in the PIR and where can I get one?**

A It uses a PP3 size battery. These are commercially available.

### ***RADIO REMOTE QUESTIONS***

**Q I pressed the Radio Remote button and nothing happened. Why?**

A Did the small red light on the Radio Remote illuminate? If not try changing this battery use a GP23A type battery.

Have you got your leisure battery connected and charged? If not charge this by connection to ground hook up for over 24hours.

**Q What battery do I need for the Radio Remote?**

A A GP23A type battery. These are commercially available.

**Q I think I have lost my Radio Remote. What can I do?**

A You need to go to your dealer to purchase a replacement remote. He will de-program your old remote from the alarm then it will never work and at the same time re-program the alarm to the replacement remote

**Q I only have one Radio Remote. Can I obtain more?**

A Yes, your dealer will be able to sell you additional remotes and program the system for them.



**A**

- Antenna  
Status 530 ..... 4-54

**B**

- Braking System ..... 4-44  
Bunks, assembling ..... 5-7

**C**

- Caravan Chassis ..... 4-45  
Braking adjustment ..... 4-49  
Manoeuvring ..... 4-47  
Operating instructions ..... 4-46  
Cooking Appliances ..... 4-15  
Guidelines ..... 4-18  
Linear Hob ..... 4-15  
Microwave Oven ..... 4-56  
Midi Oven & Grill ..... 4-16

**E**

- Electrical Equipment ..... 3-10  
Electrical System 12 volt ..... 3-13  
Electrical System 230 volt ..... 3-10

**F**

- Fault Finding  
Al-Ko Brake ..... 5-13, 5-14  
Refrigerator ..... 5-14  
Tracker Monitor ..... 5-15  
Water System ..... 5-10  
Fire & Safety ..... 5-5  
Extinguishers ..... 5-5  
Ventilation ..... 5-5

**G**

- Gas System ..... 3-6  
Gas Leaks ..... 3-8  
Types of gas ..... 3-6  
Ventilation ..... 3-8

**M**

- Maintenance, general ..... 5-1  
Microwave Oven ..... 4-56

**R**

- Refrigerators ..... 4-21  
RM 8501 ..... 4-26  
RM 8550L Model ..... 4-21  
Registration ..... 1-6  
Road lighting ..... 2-10

**S**

- Safety ..... 1-7  
Smoke Alarm ..... 4-20

**T**

- Toilet  
Thetford Cassette C-250 ..... 4-37  
Towing ..... 2-8  
Tracker Monitor ..... 4-53  
Tyres ..... 2-10

**V**

- Ventilation ..... 3-8  
Ventilation Maintenance ..... 5-5

**W**

- Warranty ..... 1-2  
Water Heater ..... 4-1  
Water System ..... 3-1  
Wheel Lock ..... 4-43  
Wheels ..... 2-11





Bailey Caravans, South Liberty Lane, Bristol BS3 2SS

[www.bailey-caravans.co.uk](http://www.bailey-caravans.co.uk)