



OWNER'S DETAILS

Model _____

V.I.N. _____

Owner's Name _____

Address _____

Tel. No. _____

Key Nos: All Doors _____

Water Filler Cap _____

Retailer's Name _____

Address _____

Tel. No. _____

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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.

Several sections are 'common to all models' in the range, the specific sections relative to a particular model are clearly indicated.

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.

Note : 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.

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.

Please note: 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.

The caravans detailed in this handbook are designated by their model year. The model year runs from 1st September 2002 to 31st August 2003. Bailey therefore dispatches models to approved retailers from 1st September 2002.

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 VIN (Vehicle Identification Number), shown in the top right hand corner. This 17 character VIN 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

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 as *Cautions* and **Warnings**.

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

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

Warning: To ensure all the occupants of your caravan enjoy a safe and relaxed environment please observe the following

- i) **Ensure all occupants are aware of their escape routes in the event of a fire.**
- ii) **Always keep escape routes and exit points clear from obstruction and debris.**
- iii) **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.**
- iv) **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.**
- v) **Never allow modification of the electrical or Liquid Petroleum Gas systems and appliances except by qualified persons.**

- vi) 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.
- vii) 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.
- viii) 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.
- ix) 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 22 of this handbook.
- x) Care shall be taken against the risk of falling out when bunks are used by children, especially under 3 years of age.
- xi) 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.



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.

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.

Warning: 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.

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

User Payload includes:-

Essential habitation equipment: Those items and fluids required for the safe and proper functioning of the equipment for habitation as defined by the manufacturer of the caravan.

Personal effects: Those items which a user can choose to carry in a caravan and which are not included as essential habitation equipment or operational equipment.

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, page 148-150.

**Note:**

- i. 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.

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

Warning: 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).

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

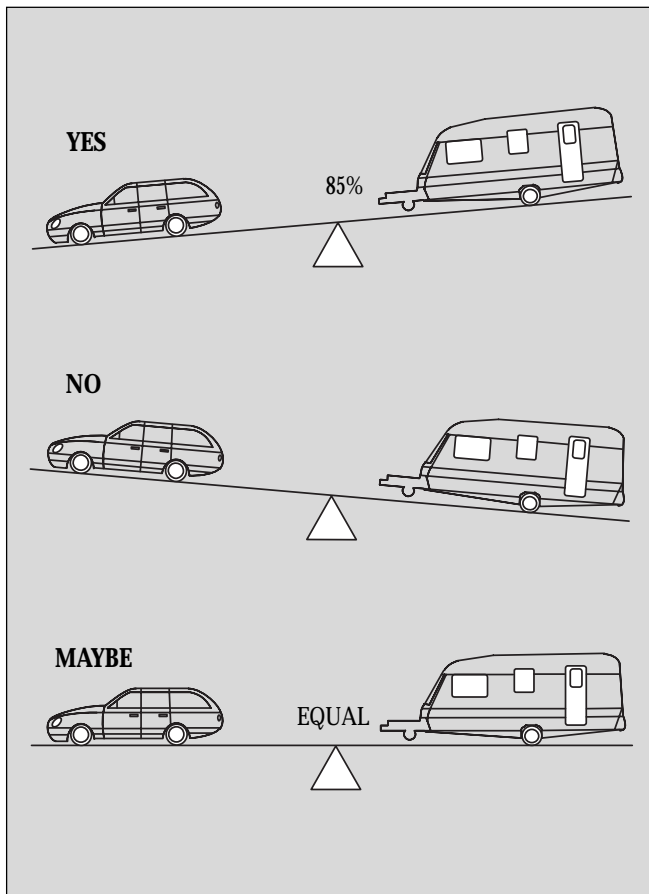
The caravan to towing vehicle weight ratio

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).

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.

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



Secondary braking cable (Break away device)

Always ensure this is looped around a secure part of the towing bracket or towing vehicle and secured back on itself with the spring clip provided. Never loop it around the towball.

Warning: it is a legal requirement that the secondary break away cable is used when towing.

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 next section).

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.

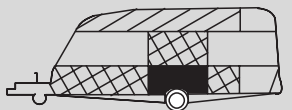
Noseweight

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 100 kg). 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.

Hitching up

Before hitching up always check the following:

1. All wheel bolts are tightened to the correct torque. For alloy wheels the wheel bolts should be tightened to a torque of 110Nm (Newton Metres), for steel wheels the wheel bolts should be tightened to a torque of 88Nm.



LIGHT
ITEMS

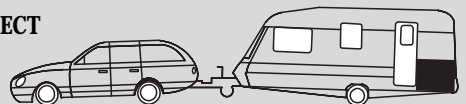


MEDIUM
ITEMS

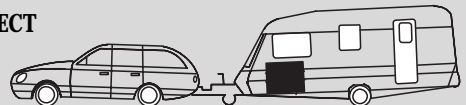


HEAVY
ITEMS

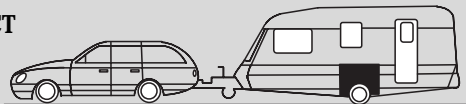
INCORRECT



INCORRECT



CORRECT





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

Caution: 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

Caution: ensure no loose items are stored in the gas box and it is not 'over-stuffed' 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.



Warning: all gas appliances and the gas bottles must be turned off whilst towing

Warning: it is recommended that a minimum of 2 people work together when hitching up the caravan to the tow vehicle.

To hitch 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.

Warning: 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.

Caution: 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.



Connect both the grey and black 7 pin plugs to the car's relevant sockets ensuring there is enough loose cable for cornering, but not too much which 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.

Towing

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.

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.



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.

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.

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.

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.

Passengers

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

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 10).

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.

Caution: 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.

Road lighting

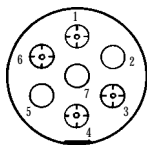
For your information the wiring diagram of the two 7-pin UK type 12N and 12S connectors is shown. These should be checked regularly. If in doubt consult a qualified electrician.



Towing vehicles with the 12N & 12S plugs wired to accept caravans of any make or model manufactured prior to model year 1999 may need their wiring configuration altered.

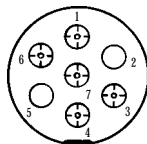
If the tow car has only a single 13-pin socket, an adapter lead will be required to fit the caravan.

12N (BLACK)



TERMINAL	COLOUR	FUNCTION
1	YELLOW	L/H INDICATOR
2	BLUE	REAR FOG LAMP
3	WHITE	COMMON RETURN (EARTH)
4	GREEN	R/H INDICATOR
5	BROWN	R/H SIDE TAIL
6	RED	STOP LAMP
7	BLACK	L/H SIDE TAIL

12S (GREY)



TERMINAL	COLOUR	FUNCTION
1	YELLOW	REVERSING LIGHT
2	BLUE	NO CONNECTION
3	WHITE	COMMON RETURN (EXCEPT FRIDGE)
4	GREEN	INTERIOR
5	BROWN	NO CONNECTION
6	RED	FRIDGE
7	BLACK	RETURN FOR FRIDGE ONLY

TUBES ○

PINS ⊕



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.

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. Caravan tyres will usually deteriorate from atmospheric effects long before they wear out.

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.

Warning: 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 5 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.

Tyre pressures

Caravan tyres should be at the pressure recommended in the handbook Page 147-149. 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.

Warning: always check your caravan and tow vehicle tyre pressures prior to any journey.

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

Wheels

Caravan wheel bolts must always only be tightened to the correct torque setting, in sequence (i.e. North, South, East, West), never clock or anti-clockwise. 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.

Warning : The torque settings should be checked after the first 50 km/ 30 miles (see page 113). For alloy wheels the wheel bolts should be tightened to a torque of 110Nm (Newton Metres), for steel wheels the wheel bolts should be tightened to a torque of 88Nm.

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.

Warning: Only use a spare wheel and tyre recommended by Bailey Caravans, which should be of the same specification as those fitted to the caravan.

Warning - Always ensure mating surfaces and bolt seating areas are clean and dry. Wheel bolts should never be lubricated.



Changing a Wheel

- i. Unhitch caravan and ensure handbrake is applied.
- ii. 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.
- iii. 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.
- iv. Place the jack plate under the axle tube as near as possible to the main longitudinal member.
- v. Jack up the caravan until the wheel for removal is just off the ground.
- vi. Remove the wheel nuts and remove the wheel.
- vii. 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 22 for tightening sequence and torque setting).
- viii. Remember to tighten all bolts to the correct torque and re-check after 50kms/30 miles.

Caution: under no circumstances should the corner steadies be used as a jack they are only a means of stabilising the caravan.

Unhitching

Do not pitch in a position in which your outfit will obstruct others 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 locking 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.

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

Re-clamp jockey wheel if necessary.

Disconnect the secondary braking cable.

Disconnect the two 7 pin plugs and return them to their holders.

Replace towball cover.

Park your vehicle alongside the caravan on the offside.

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.

Caution: 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.



Caution: 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.

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.

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.



THE WATER SYSTEM

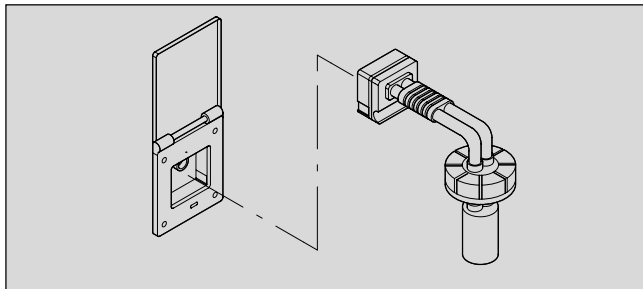
Water Supply

All models are supplied with a 12 volt submersible pump, controlled by a pressure switch. The water inlet is located in the off-side exterior wall, protected by a lift up lid.

The Submersible Pump

1. Operation

- i. Raise watermaster housing lid, (it is advisable to liberally lubricate inlet nipple 'O' rings with vegetable oil or Vaseline, this reduces the friction between 'O' rings and plastic surface of the pump plug assembly).
- ii. Place pump into a full water container ensuring the pump is fully submerged. (This helps to release any trapped air held within the pump assembly).
- iii. Plug the pump assembly into socket inserting plug shoulder into the hinged lid recess. Lever lid to lock the plug assembly in place. (This ensures the plug assembly is secure avoiding system leakage and air getting into the system).





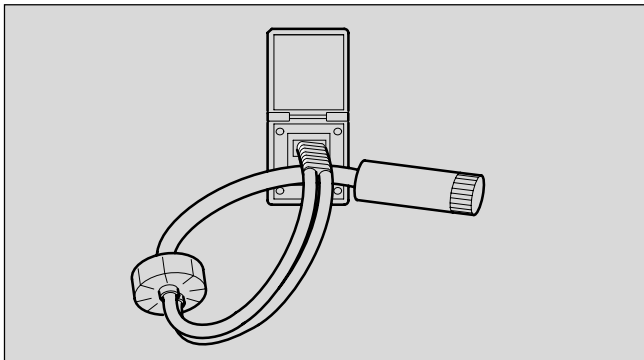
THE WATER SYSTEM (continued)

Caution: When refilling your water container always disconnect the plug from the housing and re-submerge the pump in the container before you switch the pump on again.

- iv. To remove the pump assembly, raise the lid to clear the plug shoulder from the lid recess, hold the pump at the plug whilst retracting it from the socket.

2. Routine Maintenance

- i. Ensure the hose adapter 'O' ring and the socket in the housing are kept free from dirt.
- ii. Liberally smear vegetable oil or Vaseline to inlet nipple 'O' rings on socket for lubrication.
- iii. Drain system thoroughly during the winter months, (see separate winterisation instructions).





THE WATER SYSTEM (continued)

- v. Service inlet socket annually, (use Whale's AK8834 service kit containing all serviceable parts).
- v. Change Aquasource Inline filter (on Pageant/Senator only) once per season positioned beneath kitchen tap.

3. Cleaning Containers and the System

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

4. InLine Filter (Whale Aquasource WF1230)

- i. The InLine Filter is located beneath the kitchen sink on the cold feed to the tap, (this ensures drinking water only is filtered extending the life of the filter).
- ii. The Filter should be replaced every season.
- iii. In winter months the filter should be drained by disconnecting the flexible pipe from the bottom of the filter, release the s/s hose clip. (It should be left in this position until the system is reused again to avoid frost damage).

5. Notes

- i. Never allow the pump to run dry. Always ensure the pump is submerged in the water or the life of the pump will be reduced.
- ii. Clean the water system at the start and end of the season with sterilising fluid (see notes under sterilising).
- iv. If the pump fails to deliver the most likely cause will be air in the system. To remedy this, switch off the pump and shake the pump assembly in the water. Then switch on again.



THE WATER SYSTEM (continued)

Priming the System

- i. Place pump into the container, submerging pump.
- ii. Place pump plug assembly into inlet socket, close lid ensuring plug assembly shoulder locates into lid recess.
- iii. Open all kitchen and bathroom taps to release air from system.
- iv. Adjust dust cover over opening in container (please note dust cover should not be secured to water container as air must be allowed to enter container to replace water being pumped out).
- v. Switch on 12 volt supply at main panel (isolator switch).
- vi. Water will flow from open taps expelling any trapped air within a few seconds.
- vii. Turn off tap, the system is now ready for use.

Warning: 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.

Pressure switch

Operation

The pressure switch detects the opening or closing of any tap in the system and switches the pump on or off accordingly.

At normal flow rate the pump should operate continuously - but at low flow rates the pressure switch will cycle on and off to maintain back pressure in the pipework.



THE WATER SYSTEM (continued)

Adjusting Pressure Switch

If the battery voltage is not constant, cycling may occur even at higher flow rates. This can be minimised by adjusting the switch's diaphragm sensitivity as follows:

- i. With the system properly primed, close all taps and showers.
- ii. Leave the power supply turned on.
- iii. Tighten the adjusting screw (clockwise). The pump should now be running.
- iv. Partly open one cold tap to allow water to flow.
- v. Now slowly loosen the adjusting screw until the switch starts to click. The switch will then be properly adjusted.

Onboard water supply (Senator)

This is located under the chest of drawers at the front of the caravan.

Firstly ensure that the over flow pipe is fully tightened into the base of the water tank. (The overflow pipe is removed to drain the water tank). This can be accessed by removing the lower drawer from the chest of drawers, and pulling the bed slat leader board forward. The black screwcap on the top of the in-board tank can then be taken off by reaching through the bed slats. The over flow pipe can then be seen.

To fill, place the submersible pump inside a filled water container before inserting the hose in the external filler neck. Connect plug to the external power socket.

Switching the pump switch, located on the control panel, to EXT position can now fill the tank. When tank is full, water will flow from the overflow pipe under floor. Alternatively, the tank can be filled direct from the site supply using a hose.

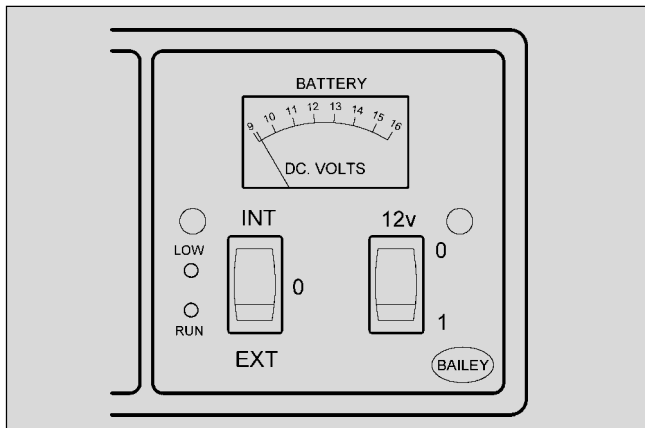


THE WATER SYSTEM (continued)

The capacity of the inboard water tank is approximately 42 litres (9.2 gallons)

Always disconnect the external pump plug once filling operation is completed.

Water can now be obtained from the in-board tank by switching pump switch on the control panel to INT position and opening the appropriate tap.



An LED located on the main control panel will flash on and off when the onboard tank water level falls to approximately 2 gallons.

Always ensure pumps are in water, dry running may cause damage.

Always ensure that the in board water tank is empty when towing.



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 1bar to protect your caravan from flooding and sustaining damage to your water system. (Plumbing connections should be checked at the beginning of every season for frost damage or loose connections).
- A Free Parks Directory listing all parks throughout the UK; where you can use the Aquasource.

WATER SYSTEM WINTERISATION

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.

- i. 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.
- ii. Remove shower heads.
 - a) To remove shower heads, unscrew by hand, then shake out and store in a dry place.
- iii. Disconnect flexible hose from bottom of filter connection to drain thoroughly.



THE WATER SYSTEM (continued)

- iv. The submersible pump should be shaken out and stored in a dry place.
- v. Open drain plug on water heater.

Caution: 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.

Setting up the Water System

- i. 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.
- v. Renew old filter after flushing system through. It is also recommended that the water system is checked during annual service.

Caution: Frost damage cannot be claimed under warranty.

Shower tray

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

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.



THE WATER SYSTEM (continued)

Caution: 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.



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.

General information

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

Cylinders are available in four sizes 3.9kg, 4.5kg, 6kg and 7kg. All four sizes will fit your gas box.

Types of gas

i. 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.

ii. 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.



THE GAS SYSTEM (continued)

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.

Caution: Regulator valves should always be in the 'OFF' position when towing.

Warning: 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.

Hoses: Hoses should be made from Neoprene, and should conform to BS 3212. Rubber hosing should never be used. It is good practice to replace hoses annually with the approved type and in any case not later than the expiration date marked on the hose. A jubilee clip is a worthwhile addition to prevent accidental removal of the hose.

The hose should not be longer than 700mm.

Changing Gas Cylinders

Ensure that the cylinder is empty, then

- i. turn off cylinder valve and all gas appliances
- ii. release retaining strap
- iii. remove cylinder from gas locker and stand on ground. Avoid tension on rubber gas hose.

**THE GAS SYSTEM** (continued)

- iv. remove regulator from cylinder
- v. fit plastic protecting cap to cylinder

With the full cylinder

- i. remove plastic protector from cylinder
- ii. connect regulator
- iii. place cylinder in cradle in gas locker. Avoid tension on rubber gas hose
- iv. connect retaining strap
- v. turn on cylinder valve and then systematically relight appliances as required

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).

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

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.

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



THE GAS SYSTEM (continued)

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.

Check the flexible hose frequently.

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.

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.



THE GAS SYSTEM (continued)

There is no danger when adequate ventilation is provided.

Warning: Under no circumstances 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 under side 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.

Warning: Do not make any additional openings in the floor.

Warning: 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.



THE GAS SYSTEM (continued)

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. (Senator only)



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)

On arrival at caravan site

Warning: Before connecting the caravan installation to the main supply

- i. 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.
- ii. 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.
- iii. 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.
- iv. make sure that the switch at the site supply point is off.
- v. remove any cover from the electricity inlet provided on the caravan, and insert the connector of the supply flexible cable.
- vi. 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.

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

On leaving caravan site

- i. first switch off the site supply



THE ELECTRICAL SYSTEM – 230 VOLT (continued)

- ii. 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.

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

- iii. 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.

Generators

- i. Switch off all appliances, the miniature circuit breakers and the residual current device.
- ii. Start the generator and allow to run for a few minutes to stabilise.
- iii. Connect the caravan to the generator.
- iv. Switch on 10amp miniature circuit breaker.
- v. Switch on the residual current device.
- vi. 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.
- vii. Switch on the 5amp miniature circuit breaker and any other appliances you require.



THE ELECTRICAL SYSTEM – 230 VOLT (continued)

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.

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

Overseas connections

Caution: 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.

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.

Mains unit

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



THE ELECTRICAL SYSTEM – 230 VOLT (continued)

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 re-set restoring the supply back to normal.

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

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



THE ELECTRICAL SYSTEM – 230 VOLT (continued)

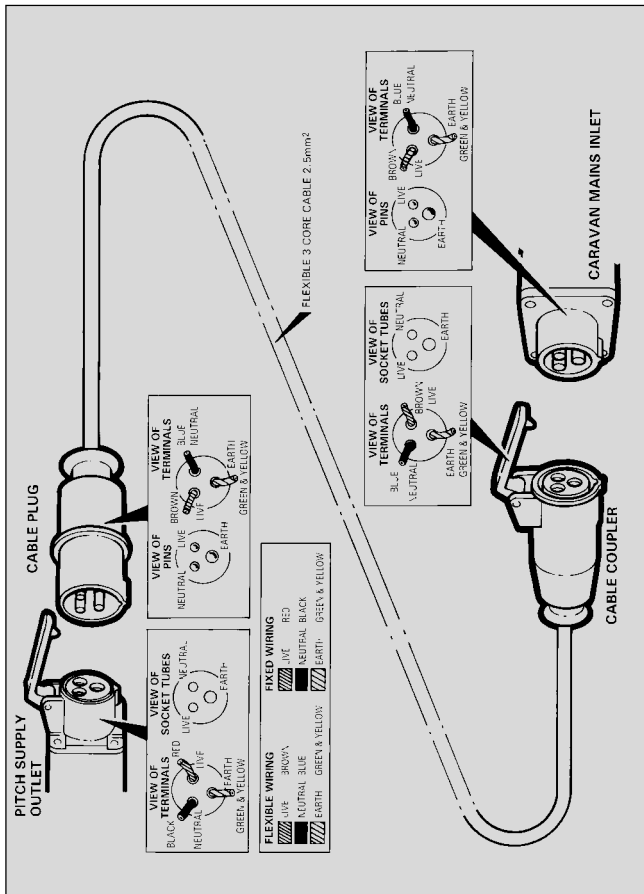
Warning: Always disconnect the electrical connector between the towing vehicle and the caravan before connecting a 230v supply to the caravan and before charging the caravan battery by any other means.

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 10 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
Charger	0.5 amps
Water heater	3.75 amps
Blown/convection air heating	8.7 amps
Colour TV	2.5 amps
Microwave	10 amps
Air conditioning	4 amps





THE ELECTRICAL SYSTEM - 12 VOLT

These units provide, via 230 volt AC, a 12 volt DC supply to the 12 volt equipment and charging of the caravan battery. Maximum is 10 amps and incorporates full automatic charging regulation. This means only the current the battery needs will be supplied, overcharging will not occur.

Ensure that a mains supply is available via the mains inlet socket located in the battery box compartment and that the RCD/MCB switches are in the UP position.

12 volt power will now be available to the main control panel.

The battery charger will only function satisfactorily if the battery is in good condition.

Should a battery contain a faulty cell the charge voltage from the battery charger will not rise sufficiently to switch the battery charger off and the battery will eventually boil dry.

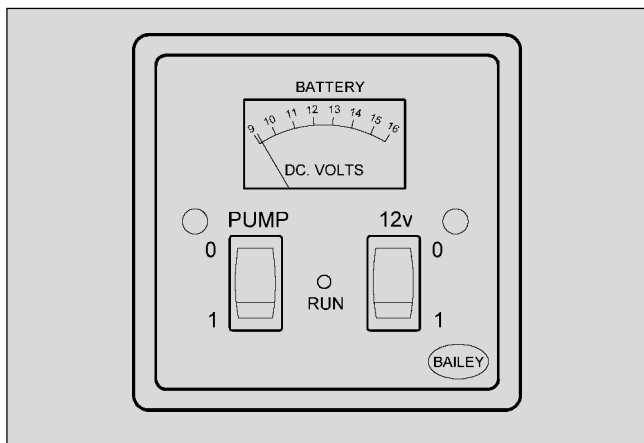
The most common cause for batteries to become faulty is when the battery is discharged below the recommended level, approximately 10V, causing one or more of the cells to fail.



THE ELECTRICAL SYSTEM – 12 VOLT (continued)

The BCA 1212 Unit

The system is fitted with an automatic relay to select the power source. When the car is connected via the 's' plug 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

- i) Indicated charge level of the caravan battery (a good battery should indicate 13.8 volts)

**THE ELECTRICAL SYSTEM - 12 VOLT** (continued)

- ii) Water pumping light, is only activated when the pump is running
- iii) Water pump isolation switch. Selects either interior (up position) Senator only or exterior (down position). Off is central

The 12-volt electrical system fuses are located in the caravan bed box. It has 12 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.



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 90 amperes/hours capacity.

Caution: 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.

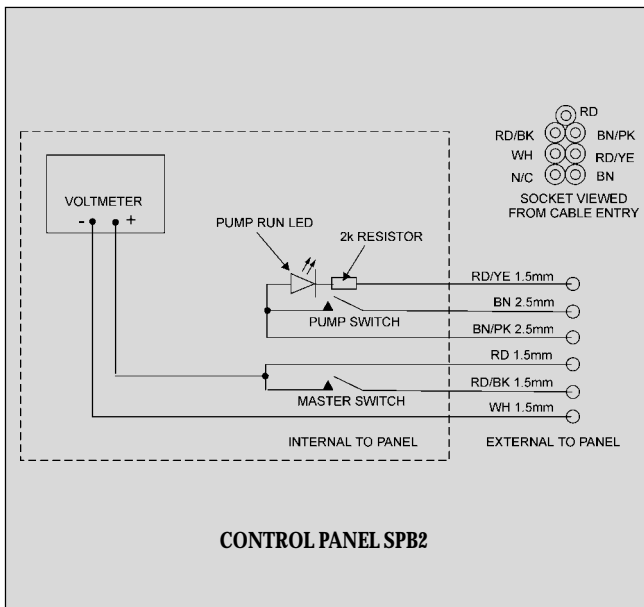
Where a 12V extension is used between the towcar and caravan, this should not exceed 5 metres in length - minimum cable size 2.5mm to minimise voltage drop.

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.

Warning: Switch off all appliances before disconnecting battery.

Negative connections should always be disconnected first and reconnected last.





THE TRUMA ULTRASTORE WATER HEATER

Operating Instructions


Filling the Truma Ultrastore with water

- i. Check that the safety/drain valve in the cold water intake is closed. Lever should be in the horizontal position, position (e).
- ii. Open the hot tap in bathroom or kitchen with pre-selecting mixing taps or single lever fittings set to hot.
- iii. Switch on power for water pump (main switch or pump switch). Leave the tap open to let air escape while the water heater is filling. The heater is filled when water flows out of the tap.

Residues of frozen water can prevent filling if there is a frost. The water heater can be defrosted by switching on the heater for a short period (max. 2mins). Frozen pipes can be defrosted by heating the room.

Gas operating instructions

Attention: Never operate the water heater without water in it!

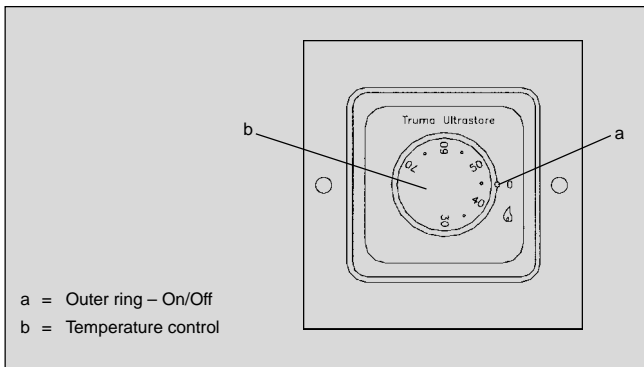
- i. Remove exterior cowl cover.
- ii. Open gas cylinder and open quick-acting valve in the gas supply line.
- iii. Select required water temperature at rotary knob (b) infinitely variable from approx. 30° to 70° by rotating the inner ring (b).
- iv. Switch on water heater by rotating the outer ring on the control panel to the  position.
- v. If there is air in the gas supply line, it may take up to a minute before the gas is available for combustion. If the appliance switches to failure during this period, switch off the appliance - wait 5 minutes - and switch on again!



THE TRUMA ULTRASTORE WATER HEATER (continued)

Switching off (gas operation)

Rotate the outer ring anti-clockwise to the off position. Fit the exterior Cowl cover. Drain the water from the system. Close quick-acting valve in the gas supply line if the appliance is not to be used for an extended period of time and close the gas cylinder.



Electrical operating instructions (230v)

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

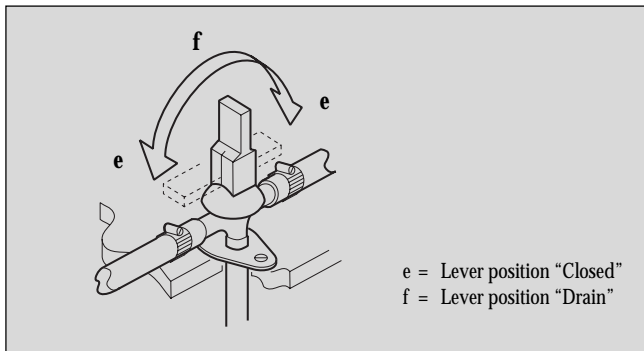
Note:

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.



THE TRUMA ULTRASTORE WATER HEATER (continued)

Draining the water heater



- i. Disconnect power for water pump (main switch or pump switch).
- ii. Open hot water taps in bathroom and kitchen.
- iii. Open safety / drain valve in vertical position, position (f).
- iv. The water heater is now drained directly to the outside via the safety / drain valve. Check that the water contents have been completely drained (10 litres)

Maintenance

Use wine vinegar for de-scaling the water heater, this being introduced into the appliance via the water supply. Allow the product to react and then thoroughly flush out the appliance with plenty of fresh water. To sterilise the water we recommend "Certsil-Argento". Other products particularly those containing chlorine are unsuitable. This should be carried out annually.



THE TRUMA ULTRASTORE WATER HEATER (continued)

The water tank in the Truma-Ultrastore is of high quality food-grade stainless steel. The special equipment available below, water hose connections and the safety/drain valve fulfil the EC guideline for quality in plastic parts (90/396/EEC).

Caution: In order to prevent the formation of micro-organisms, we recommend heating up the tank at regular intervals to 70°C and not using the water for drinking.

Important Operating Notes:

- i. If the cowl is positioned close to an opening hatch (window), keep this closed during operation. See warning plate.

Always mount the cowl cover if the heater is not being used. Non-observation of this point can lead to the function of the appliance being impaired through water, dirt or insects.

- ii. The guarantee will be invalidated if this point is not observed. Always remove the cowl cover prior to operating the water heater!
- iii. If there is a defect in the electronics, return the control Printed Circuit Board well padded. If you fail to pack it correctly the guarantee will be invalidated.

Only use original Truma-Ultrastore control p.c.b's as spare parts!

- iv. If just the cold water system is being used, without water heating, the header tank becomes more vulnerable to frost damage. Accordingly the contents should be drained by operating the safety/ drain valve. This also applies when the caravan is in storage.
- v. If the water heater is operated empty the caravan will trip out. Turn off 5 amp trip. Turn on 10 amp trip and RCD. Fill with water and turn 5 amp trip back on.



THE TRUMA ULTRASTORE WATER HEATER (continued)

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
- i. Repair jobs are only to be carried out by an expert.
- ii. The following would invalidate the guarantee;
 - a. Any alteration to the appliance (including cowl)
 - b. The use of non-Truma spare parts/ accessories
 - c. Non observance of the operating instructions
- iii. 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).
- iv. Do not operate the water heater when refuelling the vehicle and when in the garage.
- v. 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.

**THE TRUMA ULTRASTORE WATER HEATER** (continued)

- vi. 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.

Technical Data

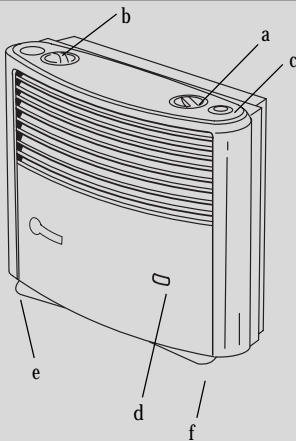
Water contents:	10 litres
Water pressure:	up to max. 2.8 bar
Type of gas:	Liquid Gas (propane or butane)
Operating Pressure:	30mbar (or 28mbar butane, 37mbar propane)
Rated thermal output:	1500W
Gas consumption:	120g/h
Heating time up to approx.	70°C;
Gas operation	approx. 35mins
Electric operation	approx. 70mins
Gas and electrical operation	approx. 20mins
Power consumption	12V
Ignition:	0.17 A
Heating Up:	0.08 A
Standby:	0.04 A
Power Consumption	230V
Heating Up:	(2A) 450W
Weight (empty):	6.7 Kg.



THE TRUMA S 3002 EL SPACE HEATER

Gas Operation

- a = Control knob
- b = Integrated control panel for Trumavent fan TEB
- c = Piezo ignitor
- d = Flame observation window
- e = Name plate (remove casing)
- f = Thermostat probe



In case of left-handed installation, the parts are arranged on the other side.

Switching on

- i. Turn on gas cylinder.
- ii. Turn control knob to thermostat setting 1 - 10 and press it down as far as the stop. At the same time keep operating the piezo ignitor rapidly until the flame ignites.
- iii. Keep the control knob pressed down for a further 10 seconds to allow the safety pilot to operate.
- iv. Watch through the flame window for another 10 seconds to make sure that the flame does not go out through air in the supply pipe (caused by the valve being closed or changing the cylinder).



THE TRUMA S 3002 EL SPACE HEATER (continued)

Always wait at least 2 minutes before attempting to re-ignite, otherwise there is a risk of blowbacks (misfiring)! This also applies if a working heater goes out and has to be re-lit.

- v. To ensure even and rapid warm air distribution as well as lower surface temperatures on the heating unit, we recommend that you operate the heater with a blown air system.

Thermostat

Set the required room temperature at the control knob (numbers 1 - 10). For an average room temperature of approx. 22°C we recommend setting 3-5 without Trumavent fan and 4-8 with Trumavent fan.

Switching Off

Set control knob to "0". If turning off for a longer period of time, close the valve of the gas cylinder.

Important operating notes

- i. If the gas supply line is filled with air, it may take up to a minute before the gas becomes available for combustion. During this time hold the control knob pressed down and continuously operate the piezo ignitor until the flame ignites.
- ii. You will have to find out the exact thermostat setting yourself, depending on how much heat you need.

The thermostat probe is underneath the heater. Please note that the thermostat will be adversely affected by cold draughts from refrigerator vents, gaps below doors, etc. or by a deep-piled carpet. Always make sure to avoid problems of this kind, otherwise satisfactory temperature control cannot be guaranteed.

Warning: Repairs are only to be carried out by a competent service engineer.



THE TRUMA S 3002 EL SPACE HEATER (continued)

- iii. Any alteration to the appliance (including exhaust duct and cowl) or the use of spare parts and accessories which are important to the function of the heater and which are not original Truma parts, as well as the non-observance of the installation and operating instructions, will lead to the cancelling of the guarantee and exclusion of liability claims.

Caution: During the initial operation of a brand new appliance, a certain amount of fumes and a slight smell may be noticed for a short while. Remedial action here is to immediately run the heater at maximum output and to ensure adequate room ventilation.

- iv. Underfloor combustion air intakes must be kept clear of dirt and slush.
- v. In winter, before switching on the heater, clear all snow from the cowl.
- vi. If the heater is repeatedly blown out in very windy parking spots, or when using in winter, we recommend the SKV cowl extension kit. (Art. No. 30690-00) which can be screwed onto the cowlshaft when required and which must be taken off again before driving the vehicle.
- vii. Inspect the exhaust duct and all connections at regular intervals, and always whenever there is a blowback (misfire). It is essential that the exhaust duct is installed so that it slopes upwards over its whole length and is securely fixed with several clamps. Never place any object on the exhaust duct, since this could result in damage. The exhaust duct connection to both the heater and the cowl must be firm and well sealed. Do not operate heaters with incorrectly fitted or damaged exhaust ducts!
- viii. Never allow the warm air outlet on the heater to be obstructed in any way. For instance never hang washing on or in front of the heater to dry. Misusing your heater in this way could cause serious damage



THE TRUMA S 3002 EL SPACE HEATER (continued)

from overheating. Do not place flammable objects near the heater. Please follow these guidelines in the interest of your own safety.

- ix. If the burner makes an unusual noise or if the flame lifts off while burning, it is likely that the regulator is faulty, and it is essential to have it checked.
- x. Cleaning (with switched off appliance): It is recommended that at least once a year, before the heating season starts, you remove any dust that has collected on the heat exchanger and base plate.

Warning: Children should be kept away from this product when it is in operation, the front can get very hot. Alternatively a fireguard should be used.

General Safety Notes

- i. If the gas system is leaking or there is a smell of gas.
 - extinguish all naked flames
 - do not smoke
 - switch off appliances
 - shut off the gas cylinders
 - open the windows
 - do not actuate any electrical switches
 - have the entire system checked by an expert.
- ii. The operating pressure for the gas supply is 30 mbr (or 28 mbr butane/37 mbr propane) and must correspond to the operating pressure of the appliance.
- iii. Do not operate appliance when refuelling the vehicle and when in the garage.



THE TRUMA S 3002 EL SPACE HEATER (continued)

- iv. Always connect the pressure regulator to the gas cylinder with great care. Inspect the regulator connection hoses regularly for signs of weakness. Caravanning gas cylinders must always be upright.

Technical data

Type of Gas : Liquid gas (propane/butane)

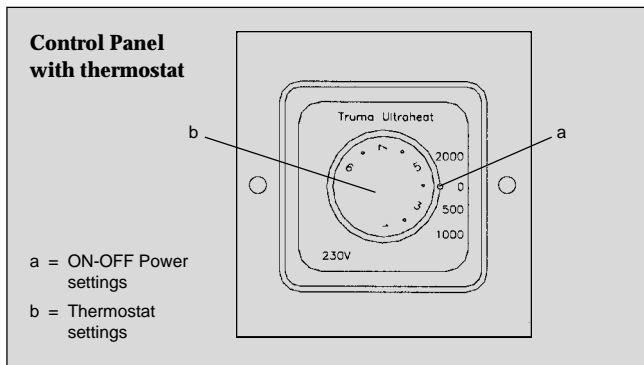
Rated thermal output : 3400 W

Gas Consumption : 30-280 g/h

Product Ident. No : CE-0085AP0325

230V OPERATION

Control panel with thermostat





THE TRUMA S 3002 EL SPACE HEATER (continued)

Switching on

Caution: before switching on, ensure that the fuse protection for the power supply of the camp site is sufficient for the selected power setting (b) – see technical data.

Warning: the pitch lead for the caravan must be fully unwound prior to use.

1. Rotate the outer ring (a) to the required power setting (500, 1000 or 2000 watts).
2. Set inner rotary control knob (b) to the desired room temperature.

If the heater is operated simultaneously with electricity and gas, the electric unit will switch itself off before overheating occurs as a result of the stronger gas burner.

Switching off

1. Rotate the outer ring (a) to the 'O' position.

Operating Notes

1. Repairs may only be carried out by an expert.
2. The heater's hot air outlet should under no circumstances be blocked. Never hang clothes or similar in front or on top of the heater to dry. This could cause serious damage to the heater as a result of overheating.
3. Do not place inflammable materials near the heater.
4. During the initial operation of a brand new appliance, a certain amount of fumes and a slight smell may be noticed for a short while. Remedial action here is to immediately run the heater at maximum output and to ensure adequate room ventilation.
5. Any alteration to the appliance (including exhaust duct and cowl) or



THE TRUMA S 3002 EL SPACE HEATER (continued)

the use of spare parts and accessories which are important to the function of the heater and which are not original Truma parts, as well as the non-observance of the installation and operating instructions, will lead to the cancelling of the guarantee and exclusion of liability claims.

Technical Data

Power supply: 230v or 50Hz

Power consumption at power setting

500 W: 2.2 A

1000 W: 4.5 A

2000 W: 8.5 A

Weight: approx 6kg

TRUMA 12V FAN OPERATION

Fan for warm air distribution and ventilation

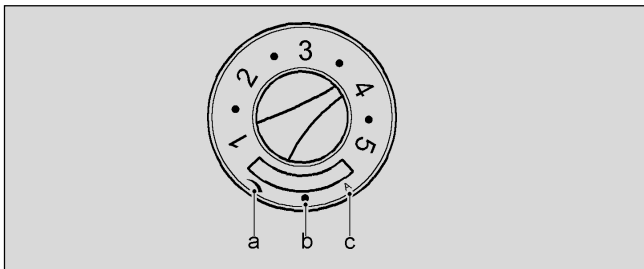
Operating instructions

Trumavent TEB with automatic speed control 12V

a = **Manual control** (e.g. for ventilation)



THE TRUMA S 3002 EL SPACE HEATER (continued)



Adjust desired output at the control knob.

- b = **Off** (or automatic operation/heating with heaters Trumatic S 3002 K and S 5002 K)
- c = **Automatic operation** (heating)

The output steadily adjusts to the respective heat emission of the heater. The maximum output can be limited at the control knob, as required. The regulating between this value and slow running is carried out automatically.

Technical Data

Power supply: 12v

Power consumption: 0.3 to 1.0A

Air flow rate: Up to 180.000 litres/h
(with fan duct UR dia. 65mm)

Up to 205.000 litres/h
(with fan duct VR dia. 72mm)

Warm air distribution



THE TRUMA S 3002 EL SPACE HEATER (continued)

The warm air system is designed individually for each type of vehicle on a modular basis. There is an extensive expansion programme available with accessories for retrofitting (see brochure).

You can obtain diagrams free of charge from the Truma Service Centre, showing optimal installation suggestions for warm air systems in all current-type caravans and mobile homes.

The quantity of air can be individually adjusted at the air flap (Fig. 1:d) for warm air distribution. In centre position 50% of the warm air is distributed to each outlet.

Use the fan duct with dia. 72mm if the fan ducts are of different lengths or on sides with a greater heat requirement. This means that the air output

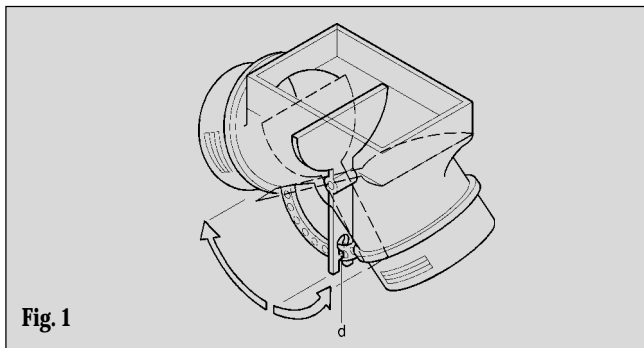


Fig. 1

can be used to the full on this side. By adjusting the air flap (Fig. 1:d) the quantity of air can be increased individually. This means that the air output on the other side is reduced.



THE TRUMA S 3002 EL SPACE HEATER (continued)

Note: If the air output drops or the operating noise increases, the fan impeller wheel may be severely soiled. Cleaning (with switched off appliance!).

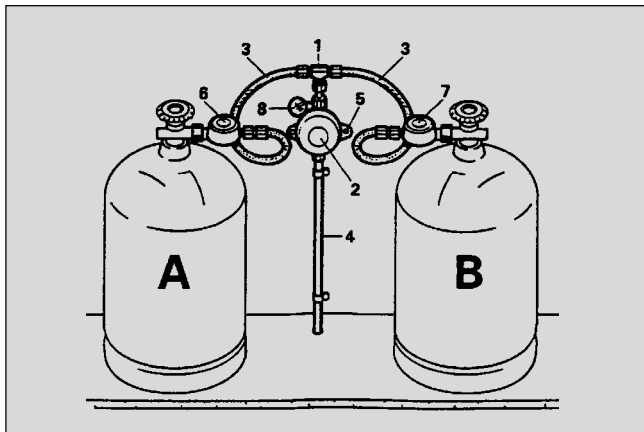
Caution: We recommend removing dust which has collected on the heat exchanger and base plate of the heater and on the impeller wheel of the Trumavent fan, once every 12 months.

Clean the impeller wheel carefully using a brush or toothbrush.



TRUMA TRIOMATIC AUTOMATIC GAS CHANGE-OVER SYSTEM

Operating instructions



Warning: Always ensure that the gas cylinders are in an upright position and secured against tipping over.

The operating and reserve cylinder regulators (6+7) have combination fittings for the cylinders. Always assemble the regulators (6+7) in such a way that the blue safety caps are facing upwards.

Caution: do not kink or severely bend the gas hoses.

First open the valve on the reserve cylinder (red type plate) and then open the valve of the operating cylinder (green type plate) Both regulators are now vented. The system regulator (marked with a yellow type plate for 30mbar) supplies the caravan appliances with the correct pressure



AUTOMATIC GAS CHANGE-OVER SYSTEM (continued)

regardless as to whether the gas is supplied from the operating cylinder or the reserve cylinder.

The two medium pressure regulators are the operating cylinder regulator (green type plate) and the reserve cylinder regulator (red type plate). The gas cylinder that is supplying the caravan at a given time is indicated by the gauge (8). The needle being in either the red or green area, which corresponds to the relevant regulator.

Changing cylinders

If the pressure gauge (8) is in the red area close the valve at the operating cylinder (A) and unscrew the operating regulator (6) from the gas bottle.

Warning: a residual amount of gas may be present during this operation, no smoking or naked flames.

All gas appliances can be supplied from the reserve cylinder (red type plate).

Connect the full gas cylinder to the operating cylinder and open the valve. (When doing this ensure that the gas cylinder suppliers regulator fitting instructions are followed). The full gas cylinder will automatically take over supplying the system.

It is recommended that periodically the reserve cylinder be swapped over and used as the operating cylinder.

Checking for leaks

1. Switch off all appliances.
2. Open both the gas cylinder valves
3. Read off the pressure on the gauge and close both the cylinder valves



AUTOMATIC GAS CHANGE-OVER SYSTEM (continued)

4. If the pressure gauge indicates the same pressure after a period of 10 minutes there are no leaks. If the pressure drops the gas system is leaking. The gas system should then be inspected and repaired by a competent person.

Technical Data

Operating pressure 30 mbar

Operating regulator 0.6bar

Reserve regulator 0.3 bar

Rate of flow 1.5kg/h

Product Identification number CE-0085AS0417



THE COUNTRY LEISURE COOKING APPLIANCES

Operating Instructions

Ensure the gas cylinder is turned on.

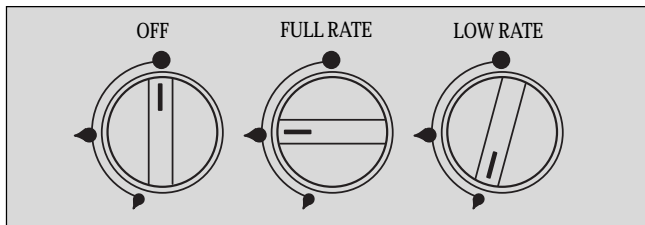
In the event of a gas smell turn off at the cylinder and contact supplier.

THE ARGENT HOB

Hotplate Burners

Warning: Glass lids may shatter when heated. Turn off all burners and grill before shutting the 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 press the ignition button if fitted. 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.



COOKING APPLIANCES (continued)

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. Although each burner will support pans from 10 to 22cm, 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.

THE MIDI OVEN & GRILL

Grill

Warning: Accessible parts may be hot when the grill is used! Young children should be kept away.

Although the grill does heat up quickly, it is recommended that a few minutes preheat be allowed. The grill pan should be stored in the storage compartment, but when the grill is lit it should be placed in position to protect the base lining. The grill is fitted with a flame supervision device, so if for any reason the flame goes out, the gas supply to the grill burner will be shut off. In the event of the burner flames being accidentally extinguished, turn off the burner for at least one minute. It is normal for the flames on this burner to develop yellow tips as it heats up, particularly on Butane. The grill pan trivet can be reversed to give a choice of grilling height.



COOKING APPLIANCES (continued)

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 soap and 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. **To turn off** : turn the control knob until the dot on the control knob is aligned with the dot on the control panel.
7. **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.



COOKING APPLIANCES (continued)

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

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


COOKING APPLIANCES (continued)

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

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.



COOKING APPLIANCES (continued)

- 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.

Caution: 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.

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.

Warning: all servicing must be carried out by an approved competent person. After every service the appliance must be checked for gas soundness.



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.

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.

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

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.

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

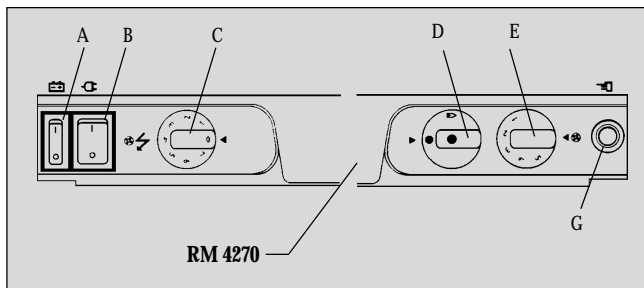


ELECTROLUX REFRIGERATOR

When using your refrigerator for the first time, it is advisable to wash the interior and its accessories.

When the caravan is on tow, the refrigerator should be operated electrically, i.e. from the 12v battery in the towing vehicle and not by means of bottled gas.

RM 4270 model



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

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

Refrigerator temperature is controlled by a thermostat (C) when the unit runs on 230v. The gas supply is turned ON/OFF by means of the knob (D).

Refrigerator temperature is controlled by thermostat (E) when the refrigerator runs on LP gas. Please note that the thermostat has no OFF position.

The gas flame is electronically lit, monitored and re-lit if necessary. For




ELECTROLUX REFRIGERATOR

MODEL RM 4270 (continued)

this, the toggle switch (F) should be 'ON' during gas operation.

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

LP Gas Operation - RM 4270

- i. Open the shut-off valve of the gas bottle (check that there is enough gas). Open any on-board shut-off valve.
- ii. Check that the switches for mains and 12v operation are off.
- iii. Turn on the gas supply by pressing the knob (D) and turning it to the  position.
- iv. Set the thermostat knob (E) to the highest setting.
- v. Keeping the flame failure device button (D) pressed, depress the piezo igniter button (G) rapidly several times in quick succession until the flame lights.
- vi. Keep the button (D) pressed for a further 10 to 15 seconds then release it. The flame, which should be blue, can be seen through the sight glass (inside the refrigerator bottom left hand corner).
- vii. To terminate gas operation turn knob (D) to '•'.

230v Operation

- i. Turn off gas or 12 v operation when applicable.
- ii. Turn knob (C) of the thermostat to its highest (coldest) position.
- iii. Set switch (B) to position 1. The switch will light up green when the power supply is connected.



ELECTROLUX REFRIGERATOR

MODEL RM 4270 (continued)

12v Operation

Only operate your refrigerator on 12v when the engine of your vehicle is running otherwise your battery will soon become discharged.

Before operating the refrigerator on 12v it should be pre-cooled together with its contents by running it on bottled gas or mains for a few hours before starting a journey.

- i. If applicable, turn off the gas operation.
- ii. Set the 12v rocker switch (A) to I. The switch will light up red when the power supply is connected.

Regulating the temperature

It will take a few hours for the refrigerator to reach normal operating temperature so it is suggested that the fridge is pre-cooled before loading with foodstuffs.

On LP Gas operation

The refrigerator temperature is regulated by the gas thermostat (E), which should be set at 3. Set the thermostat to a higher figure if a cooler temperature is required. If less cooling is required set to a lower figure.

On 230v Operation

The refrigerator is controlled by a thermostat and the thermostat knob (C) should be set at 3-5. If a lower (colder) temperature is required, set the thermostat to a higher figure. If less cooling is required set to a lower figure.

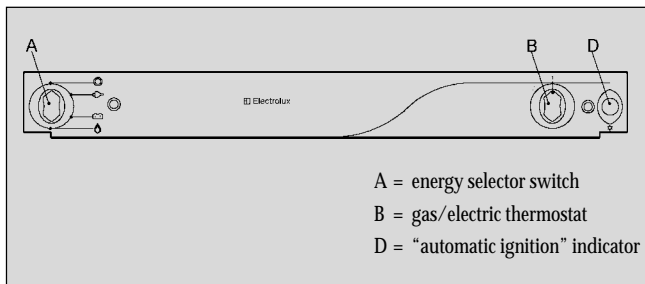
On 12v Operation

The refrigerator runs continuously.



ELECTROLUX REFRIGERATOR MODEL RM 6291L

RM 6291L



Automatic ignition

1. Set energy selector switch (A) to Gas.
2. Press and hold rotary switch.
3. The ignition process is activated automatically, accompanied by a ticking sound; the indicator lamp (D) will flash. Upon successful ignition, the sound and the flashing will stop.
4. Keep rotary switch "B" depressed for another 10-15 seconds, then release.
5. If the flame goes out, the ignition system will repeat the ignition process automatically.
6. Adjust the temperature in the main refrigerator compartment using rotary switch "B".

All refrigerators, whether manual or automatic ignition, are equipped



MODEL RM 6291L (continued)

with automatic flame protection, which automatically cuts off the supply of gas approximately 30 seconds after the flame goes out.

When using for the first time, and after changing the gas cylinder, the gas pipes may contain air. By means of brief operation of the refrigerator and any other gas appliances (e.g. cookers), air is removed from the gas pipes. The gas will then ignite without delay.

Switching off

1. Set energy selector switch (A) to position "0" (OFF). The appliance is now fully switched off.
2. Leave the door of the refrigerator and the frozen food compartment ajar.

Switching off gas operation

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

Using the refrigerator

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

Automatic Ignition

Note:

The refrigerator is equipped to operate off mains power, DC or liquid



MODEL RM 6291L (continued)

gas. The desired power option is selected by means of energy selector switch (A). Energy selector switch (A) has four settings: AC mains power, DC (12V), gas (liquid gas), O (off).

Electrical operation

1. 12V DC


The refrigerator should only be used while the motor is running.

1. Set energy selector switch (A) to 

The refrigerator operates without thermostatic control (continuous operation).

2. Mains power

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

1. Set energy selector switch (A) to 
2. Use rotary switch (B) to regulate the temperature in the main refrigerator compartment.

Gas Operation


- The refrigerator should only be operated using liquid gas (propane, butane).
 - Operation using gas is prohibited in petrol stations.
1. Open the valve of the gas cylinder.
 2. Open the shut-off valve to the gas supply.

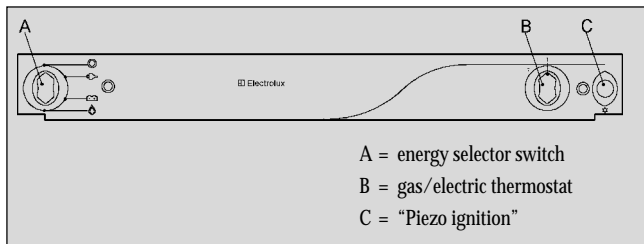
Proceed to the description that applies to YOUR model.



MODEL RM 6291L (continued)

Manual ignition

1. Set energy selector switch (A) to gas 
2. Press and hold rotary switch.



3. Activate Piezo ignition (C) several times at intervals 1-2 seconds.
4. Check the inspection glass to see whether there is a flame (the inspection glass is inside the refrigerator at the bottom left).

Winter Operation

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

Your caravan is supplied with Electrolux winter covers as standard equipment. These covers should be fitted when the outside temperature is below 10°C.

Caution: The covers should also be used when the caravan is in storage or is being washed by a high pressure spray, or during very wet weather.

Note: Remember to remove all winter covers at all other times when the refrigerator is in use.



MODEL RM 6291L (continued)

Useful Hints

Make sure that :

- i. The refrigerator is not operating in 12v when the vehicle is parked, otherwise you may drain the car battery.
- ii. Defrosting is carried out periodically.
- iii. The refrigerator is clean and dry with the door left open when it is not in use.
- iv. Liquids or items with a strong odour are well packaged.
- v. The ventilation openings are not obstructed.
- vi. The door is secured by means of the travel catch when the caravan is being towed.
- vii. Only one mode of operation at a time is used to run the refrigerator.
- viii. The refrigerator is not overloaded, also ensure air circulation between cooling fans and contents.
- ix. If the refrigerator does not work on mains, operate on gas.

Cleaning the refrigerator

Clean the interior of the refrigerator regularly to keep it fresh and hygienic. A weak solution of warm water and bicarbonate of soda is recommended. Never use detergents, scouring powders, strongly scented products or wax polish to clean the interior of the refrigerator.

The exterior should be wiped clean periodically using a damp cloth and small quantity of detergent. Only use soap and water on the door gasket and dry thoroughly.

The cooling unit behind the refrigerator ought to be cleaned with a brush

**MODEL RM 6291L** (continued)

periodically but make sure that the refrigerator is switched off when doing this.

Travel Catch

All models are fitted with a travel catch to keep the refrigerator door securely closed when the vehicle is on the move. Remember always to push the catch down so that its lower end fully engages the plastic bush in the top of the door, before moving off.

The travel catch can also be used to position the door ajar so that the refrigerator can be aired when not in use.



THETFORD REFRIGERATOR MODEL N90 E

Switching on the refrigerator

- Clean the inside of the refrigerator before you switch it on.
- Let the refrigerator cool for at least eight hours before you place food in it for the first time.
- The freezer compartment should be cold one hour after switching on the refrigerator.

Igniting and starting your refrigerator



A = Energy source selector switch

B = Electric thermostat

C = Gas control button

D = Flame meter

- A. The refrigerator can be powered by the mains (230V), direct current (12V) or liquid gas. Select the energy source that you want by means of the energy source selector switch (A). The switch has four settings:



THETFORD REFRIGERATOR MODEL N90 E (continued)

- **direct current (DC)**



- **mains supply**



- **gas**



- **switched off**



- B. The thermostat controls the refrigerator temperature when the refrigerator is powered from the mains (230V). Position 5 is the coldest temperature setting.
- C. The gas control button controls the refrigerator temperature when the refrigerator is powered by gas. Position 5 is the coldest temperature setting.
- D. The flame meter shows whether the flame is burning. The flame is burning when the meter comes into the green area.
- E. Pressing the manual (piezoelectric) starter produces a spark that ignites the flame in the burner.




THETFORD REFRIGERATOR

MODEL N90 E (continued)

Electrical operation

The refrigerator can be powered by electricity in two ways:

- 12 V DC: Set the energy source selector switch (A) to 
- the refrigerator will now be powered by the battery of your car or camper.

Caution: Always use the gas connection or mains voltage to start up the refrigerator for the first time and to cool it. Power from the battery of your vehicle is suitable only for maintaining the temperature of the refrigerator and its contents once it has been refrigerated. When powered by a vehicle battery the refrigerator works without temperature control (i.e. constant operation).


- Mains voltage (230 V): set the power selector switch (A) to
- Set the temperature by means of the thermostat, rotary switch (B). Position 5 is the coldest temperature setting.

Open the valve of the gas bottle and the gas taps. Set the gas control button to the 5th position. Set the energy source selector switch (A) to Ignite the gas flame:



THETFORD REFRIGERATOR MODEL N90 E (continued)


Power with gas

- 1 Open the valve of the gas bottle and the gas taps.
- 2 Set the gas control button to the 5th position.
- 3 Set the energy source selector switch (a) to 

Automatic ignition:

- Press the gas control button, rotary switch (C), and keep it depressed.
- Ignition takes place automatically. You will hear a ticking noise. If ignition was successful, the noise will stop and the flame meter will turn green. Release the gas control button.
- If the flame goes out, ignition will be repeated automatically.
- Set the desired refrigeration level by means of the gas control button, rotary switch (C). Position 5 is the coldest setting.

Switching off the refrigerator

1. Set the energy source selector switch (A) to ;
2. Turn the gas control button, rotary switch (C) to 0 (Off);
3. The refrigerator is now completely switched off.

Note! The refrigerator is only fully switched off when both the energy source selector switch and the gas control button are at zero. In the case of a refrigerator with electrical ignition, when the gas control button is not set to 0, the ignition mechanism will keep sparking. This can cause a flat battery.



THETFORD REFRIGERATOR

MODEL N90 E (continued)

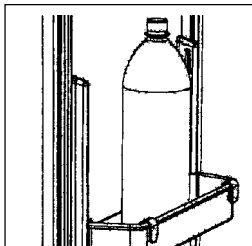
4. Use the door locking mechanism to lock the open door. This prevents unpleasant odours and mould in the refrigerator.

Caution: *If you are not going to use the refrigerator for a prolonged period, close the valve of the gas bottle and the gas taps.*

Securing products for driving

One of the racks in your refrigerator has a system for securing products during driving. The system consists of a simple click-and-slide plastic strip. To secure products on the rack while driving, push the plastic strip as tightly as you can against the products on the rack.

In the storage space on the inside of the refrigerator door, there is the unique Thetford flexible bottle slide. The slide prevents bottles from sliding around during driving. Push the slide against the products in the door or place the products between the bottle slide.

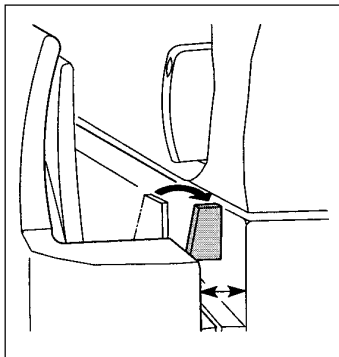




THETFORD REFRIGERATOR MODEL N90 E (continued)

Door locking mechanism

The refrigerator door has an automatic locking mechanism. The door locks automatically when you press it shut firmly. The lock releases unnoticed when you open the refrigerator with your hand. This automatic locking mechanism also keeps the refrigerator door shut during driving. For some models an additional security device is fitted below the refrigerator. By pushing the locking bar over the closed refrigerator door you can make doubly sure that the door does not come open during your journey.



If you are not going to use the refrigerator for a prolonged period of time, you can use the special hook of the door locking mechanism to prevent odours. Turn the hook a quarter of one rotation to position it at right-angles to the refrigerator. In this position, the hook prevents the door from closing.



THE THETFORD CASSETTE C-200 CW / CWE

The unit consists of two sections, a permanently installed toilet system and a slide out waste holding tank.

The toilet section of the C-200 CW includes a rotatable bowl, removable seat and cover, a console with flush handle, a built in flush water tank and a waste level warning indicator. Underneath the bowl, the valve blade handle is located.

The waste holding tank is located underneath the toilet and is removed for emptying from the outside of the vehicle through an access door. A rotating pour-out spout, automatic holding tank vent, air release valve, valve blade, carrying handles and hand grip are incorporated in the waste holding tank. A sliding cover guarantees you optimal hygiene. The model identification can be found on the identification label (*see exploded view*).

Caution: make sure that the flush and holding tanks are both completely empty before towing.

Preparing for use

- i. Open access door pull retaining clip upwards (fig.1).
- ii. Remove holding tank by pulling straight out. When holding tank hits the stop, tilt front end downwards slightly and remove (fig.2).
- iii. Position tank vertically and swivel pour-out spout upwards (fig.3).
- iv. Remove dosage cap and pour-out spout. Add required amount of toilet fluid in the dosage cup (fig.4). Add approximately 2 litres of water through the spout to cover holding tank bottom. Replace cap and return pour-out spout to original stored position.

Caution: warmer weather or longer intervals between emptying the waste tank may require additional toilet fluid. Use only Thetford toilet fluid to achieve the best results.

Caution: never add toilet fluid directly into the toilet bowl.



THE THETFORD CASSETTE C-200 CW / CWE (continued)

- v. Slide holding tank into position through access door (fig.5). Never force insertion as this can cause severe damage to the toilet.
- vi. Make sure the holding tank is secured by the retaining clip (fig.6).
- vii. Open the water fill door and add 50ml. of Aqua Rinse. This results in a better flush and improves the hygiene of the toilet. Then fill the tank with fresh water using a jerry can or hose. Tank Capacity is 7 litres (fig.7).

Operation

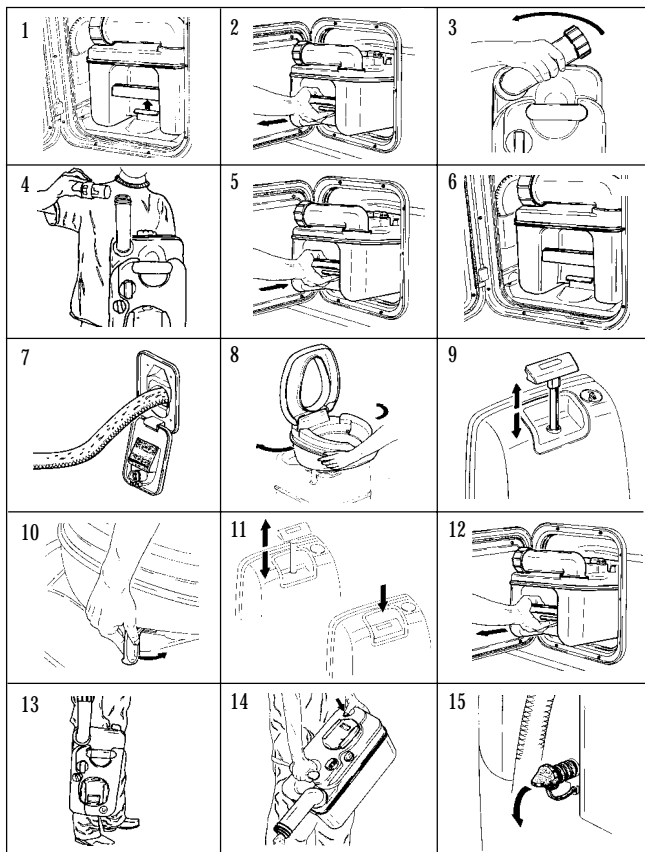
- viii. Turn the bowl into most comfortable position (fig.8) or pressing down the flush button for the CWE version (Senator only).
- ix. Before using the toilet it is recommended to flush some water into the bowl by lifting and pressing down the flush handle (fig.9).
- x. After use open the blade, by pushing the blade-handle anticlockwise (fig.10).
- xi. To flush, lift the flush handle and press it down (fig.11). After flushing, close the blade by pushing the blade handle clockwise.

Emptying the holding tank

The holding tank capacity is approx. 17 litres and the tank should be emptied when the waste level indicator lights up. The waste level indicator light lights up when the tank holds more than 15 litres of waste.

Caution: Do not allow the holding tank to become over filled.

- xii. Open the access door and remove the holding tank. The holding tank can only be removed when the valve-blade is closed (fig.12).
- xiii. Carry the holding tank to a normal household type toilet or other


THE THETFORD CASSETTE C-200 CW / CWE (continued)




THE THETFORD CASSETTE C-200 CW (continued)

authorised disposal point. Place the holding tank in the vertical position and rotate the pour-out spout upwards (fig.13).

- xiv. Remove the measuring cap. Grasp the unit by upper carrying handle nearest pour-out spout. Place other hand on upper rear hand grip so that the vent button can be depressed with the thumb while emptying. This ensures a smooth outflow of the tank contents (fig.14).

Only depress the vent button when pouring out spout is pointed downwards.

Rinse the holding tank with clean water. For preparing to use again, see steps 1 to 7. Replace the waste holding tank and lock the access door.

Cleaning and Maintenance

The largest seal, the seal for the ventilation and the seal for the cap are made from rubber. These seals have to be cleaned regularly (once or twice a month, depending on the frequency of use). For best results, use Thetford Bathroom Cleaner and Maintenance Spray.

Large seal: Remove the sliding cover and open the blade. Clean the seal with water and dry it, then spray with Thetford Maintenance Spray.

Ventilation seal: Turn the automatic vent 60° anti clockwise and take it out. Clean the seal with water and dry it.

Cap seal: Clean the seal with water, dry it and use Thetford Maintenance Spray or Olive Oil.

Waste tank: Empty the tank and rinse it with clean water.

Cassette toilet: Use Thetford Bathroom cleaner or diluted washing-up liquid to clean the bowl, seat and cover and the outside of the toilet. When the toilet is not going to be used for a long time, leave the cap off the



THE THETFORD CASSETTE C-200 CW / CWE (continued)

pour-out spout and leave the blade open so the cassette can dry.

Caution: Never use washing-up liquids which contain chlorine, solvents or other aggressive substances to clean the toilet.

Winterising / Storage

The Thetford Cassette is easily winterised for storage.

Empty as much flush water as possible by using the flush handle to empty the water into the waste tank.

Once the pump has been cleared of water place appropriate size container under the drain plug. Empty any remaining water from the fresh water tank by taking out the drain plug (fig. 15). Empty the holding tank and clean the unit as described above. Clean the seals and lubricate them where appropriate after drying. (See cleaning and maintenance).

Cold weather use

The toilet can be used in cold weather conditions provided that the toilet is in heated surroundings. When the vehicle is not heated for more than a day or night, winterise the cassette.

High altitude and hot weather use

Pressure may build up in the holding tank if the tank is not inserted while driving at high altitudes or in warm weather conditions. The automatic holding tank vent will vent the tank when there is over or under pressure.



OMNIVENT ROOFLIGHT MOUNTED EXTRACTOR FAN

Use Ventilator (only for OMNIVENT 12V)

The ventilator is started by the red switch; or “blowing” or “suction”.

The airflow is adjusted by the black switch:

position 1 = $7\text{m}^3/\text{min}$. (245 cft/min.) (15W - 1.2 A)

position 2 = $12\text{m}^3/\text{min}$. (420 cft/min.) (30W - 2.5 A)

position 3 = $20\text{m}^3/\text{min}$. (700 cft/min.) (50W - 4 A)

Caution: Allow motor to stop completely before reversing the fan direction as this may overload the 12V supply.



THE ALKO CARAVAN CHASSIS

Chassis members

The ALKO lightweight chassis has been perfected by many years of research and development, supported by an exhaustive test programme.

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 ALKO CARAVAN CHASSIS (continued)

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.

Drilling or welding of parts or accessories

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

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).

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. Each type has provision for an anti-theft device (available as an extra) consisting of brass insert, complete with 2 keys. The barrel lock will prevent movement of the handle, therefore making it possible to lock the coupling either 'on' or 'off' the towing ball. If fitted with an AK 300 coupling head, or AL-KO AKS 1300 or 2500 Stabiliser; long-term security can be obtained by fitting an AL-KO "Safety" Security Device.



THE ALKO CARAVAN CHASSIS (continued)

Operation : Type AK 10/2 – AK 300 Coupling Head

Lift locking trigger (AK 10/2), and lift handle upward and forward. Place the unlocked coupling onto the towing ball and with the slightest downward pressure it will lock onto the ball automatically. Ensure locking trigger returns to its free position before commencing to tow.

Secondary braking (Breakaway cable)

The cable should be connected to the towbar close to the towball, not the towball unless no alternative fixing is available.

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.

Caution: If the nose of the caravan is lifted manually the locking trigger (AK 160) must be engaged first and the handle lifted forward.

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).

Warning: 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.

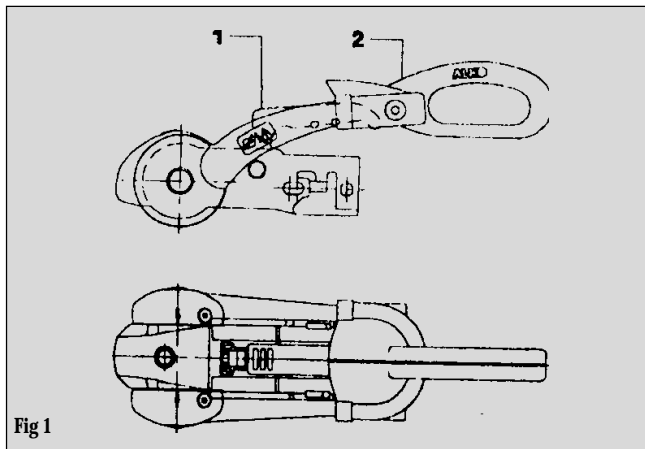


THE ALKO CARAVAN CHASSIS (continued)

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).

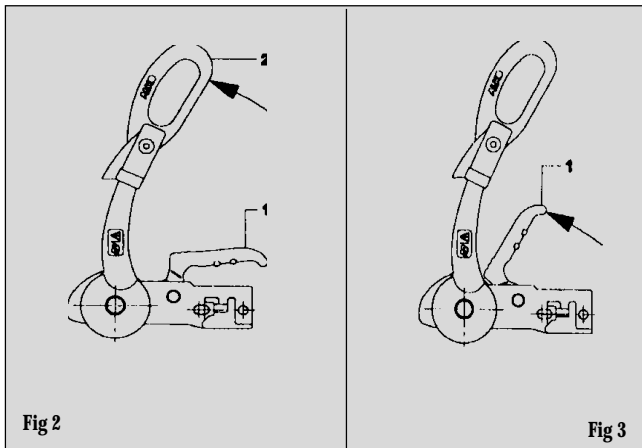


Coupling:

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 AKS2004 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 ALKO CARAVAN CHASSIS (continued)



Warning: The coupling is correctly engaged when the green edge of the safety indicator button is visible (Fig. 4/Item 3).

Stabiliser Unit:

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

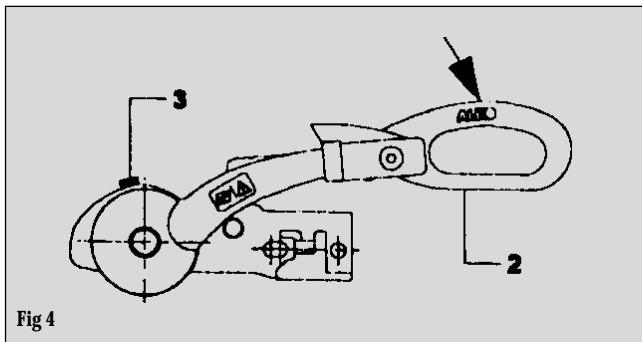
Uncoupling:

1) Pull the stabiliser lever handle up as far as it will go, open the coupling handle and lift the AKS2004 from the towball. With larger nose loads, coupling and uncoupling can be made easier by using the jockey wheel to assist lifting.



THE ALKO CARAVAN CHASSIS (continued)

Please Note: 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.



Checking the efficiency of the left/right friction pads:

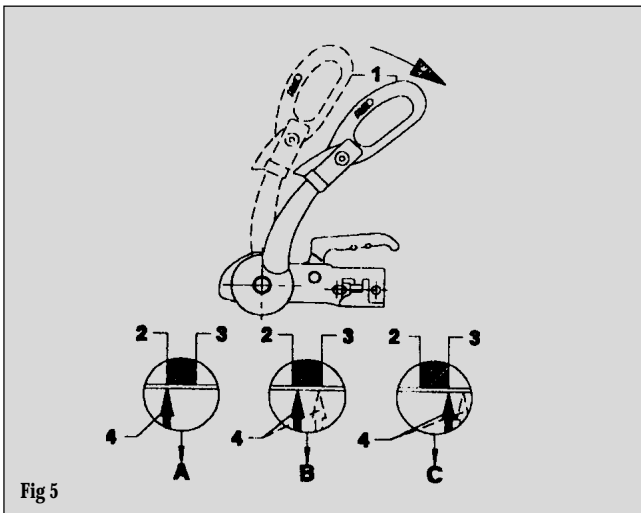
- 1) Couple up AKS 2004
- 2) Open Stabiliser lever (Fig. 5/Item1).
- 3) Close Stabiliser lever until resistance is felt (ie friction pads are in contact with the ball but not yet under pressure).
- 4) If the arrow on the arm (Fig. 5/Item 4) is before or on the marked area (Fig. 5/Item 2) the friction 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)



THE ALKO CARAVAN CHASSIS (continued)

- 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).

Please Note: It is not necessary to adjust the friction pads



Operation:

Manoeuvring:

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



THE ALKO CARAVAN CHASSIS (continued)

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).

Noises whilst driving:

As a rule, the friction pads of the AKS 2004 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

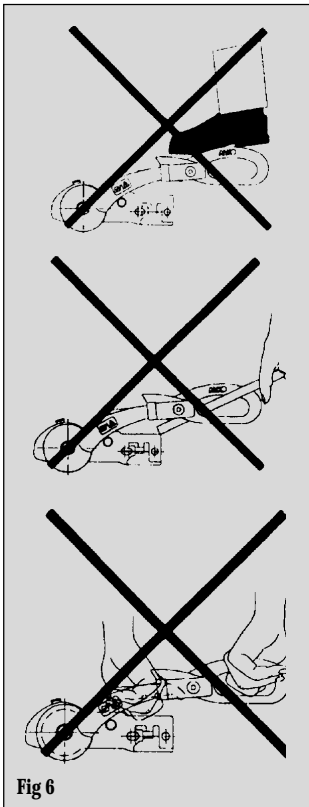


Fig 6

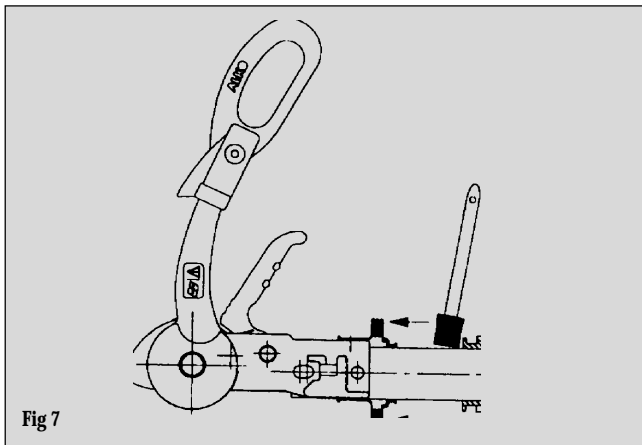


THE ALKO CARAVAN CHASSIS (continued)

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.

Remedial Action:

- Clean the tow ball and friction pads by lightly rubbing the surface (100-120 grit emery paper)
- 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).
- Visit a specialist workshop to have the ball holding area checked for damage and the locking mechanism for function. If necessary, change the towball.





THE ALKO CARAVAN CHASSIS (continued)

Storing

To reduce the possibility of contamination of component parts of the AKS 2000 the stabilising handle should be closed.

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.

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.

Jockey wheel

Lubricate wheel and screw thread periodically with grease.

Brake linkage

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

Corner steadies

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



THE ALKO CARAVAN CHASSIS (continued)

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).
- 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

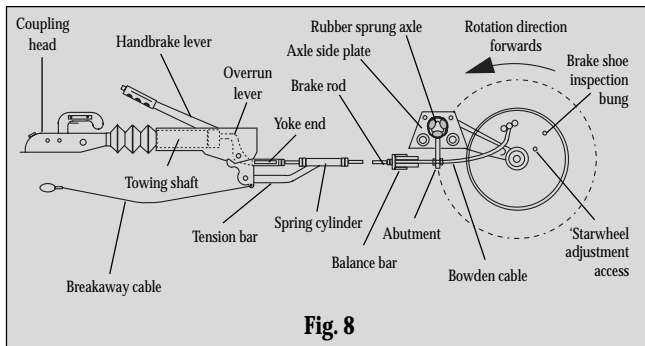


Fig. 8



THE ALKO CARAVAN CHASSIS (continued)

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).

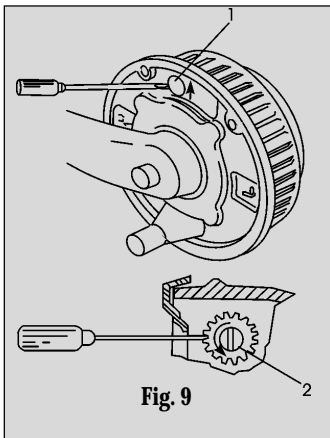
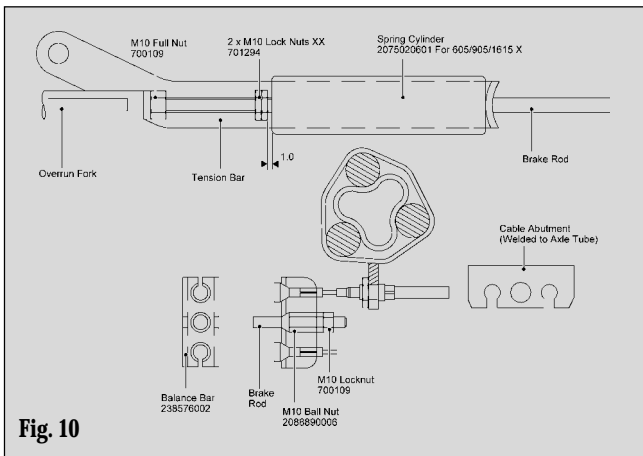


Fig. 9

- 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


THE ALKO CARAVAN CHASSIS (continued)

Fig. 10

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.

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).



THE ALKO CARAVAN CHASSIS (continued)

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 road wheels have been removed, re-tighten using a calibrated Torque Wrench to 88 Nm (65 lb-ft) - on all M12 wheel bolts - in sequence, i.e. North, South, East, West not clock or anticlockwise. 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 ALKO CARAVAN CHASSIS (continued)

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

Caution: 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.

Caution: 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.



REMI CARE DOOR FLYSCREEN

Operating Instructions

i. To close REMIcare:

Pull handle/crossbar across door aperture until hook engages on closing profile.

ii. To open REMIcare:

a) From inside.

To release hook, pull handle/crossbar slightly toward you then, still holding the handle/crossbar, allow the tension to pull the flyscreen back into the cassette.

b) From outside.

To release hook, push handle/crossbar away from you then, still holding the handle/crossbar, allow the tension to pull the flyscreen back into the cassette.

Caution: To avoid damage to the tension mechanism DO NOT allow the flyscreen to “whiplash” back into the cassette.

iii. Cleaning:

Use a damp cloth, and if necessary, a normal household cleaner without abrasives or solvents.

Caution: Do not tow with flyscreen closed. Do not leave flyscreen closed for long periods (more than 3 weeks).



REMIpart DOOR FLYSCREEN

Operating Instructions

The screen is designed to be used when the upper half of the stable door is open.

Using the lower bar finger grip gently pull the screen downwards and around the curve towards the closed section of the door. Push firmly and the bar will clip onto and guide the screen back to the top position.

Caution: The screen is controlled by a tensioned spring. Do not let the screen 'whiplash' back into the cassette. It is not advisable to keep the screen closed when travelling for long periods of time.

Cleaning

Use a damp cloth, and if necessary a non-abrasive household cleaner without solvent.

Tensioning

The blind spring may be tensioned using a small screwdriver. The tension screw is located at the top of the unit on the right hand side. Turn this 1 or 2 times and check the tension. Repeat if necessary but do not over tighten.



REMI TOP FIXED VENTILATION ROOFLIGHT

Operating Instructions

Caution: Before towing please open the blinds and ensure the REMItop is completely closed and both handles/locks are engaged.

i. To open RemiTop:

- a) Unlock by pressing buttons in centre of both handles/locks and turning both through 90 degrees.
- b) With both hands on the handles/locks, push the cover upwards.
- c) The cover can be left in tilt position or slid almost fully open.

ii. To operate sunscreen and flyscreen:

- a) Pull flyscreen handle all the way across aperture and twist handle until it hooks onto retaining channel.
- b) The sunscreen can be pulled all the way across aperture or to any intermediary position.

iii. To close RemiTop:

- a) Return both blinds to open position.
- b) Return cover to tilt position.
- c) With both hands on handles/locks pull the cover fully downwards.
- d) To lock, press the buttons in the centre of handle/lock and turn both through 90 degrees.

iv. Bad weather setting:

The handle/lock may be locked into the centre recess of the holder screwed into the frame. The cover is then open 15mm. Rain cannot enter nor can the wind raise the cover further.

**REMI TOP FIXED VENTILATION ROOFLIGHT** (continued)v. **Cleaning:**

Use a damp cloth, and if necessary, a normal household cleaner without abrasives or solvents.

Caution: DO NOT spray water under the cover. There is an air gap between the frame and the cover (for fixed air ventilation) through which water deliberately sprayed under the cover would enter the interior.

Caution: Never tow your tourer with RemiTop in the tilt or open setting.



REMIjoy combination window blinds (Senator Only)

Operating Instructions

The sun screen may be adjusted to any level by pulling gently upwards using the finger grip in the centre of the lower bar. This will also have the effect of giving visual privacy. To lower simply pull downwards using the finger grip.

The fly screen can be pulled downwards and clipped onto the sunscreen bar at the selected height. To release gently push the finger grip towards the window.

If required the fly screen may be pulled down completely with the sunscreen in the open or down position.

*Caution: The screens are controlled by tension springs. Do not let the screens 'whiplash' back into the cassette. It is **not** advisable to keep the blinds closed when travelling for periods of 2 weeks or more.*

Tensioning

The blind spring may be tensioned using a small screwdriver. Pull off the corner pieces and turn the tension screw 1 or 2 times in a clockwise direction. Repeat if necessary but do not over tighten.



REMIflair Combination Window Blinds.

Operation and Care

The cassette contains a sun screen and a fly screen blind.

The fly screen is operated by gently pulling down the handle nearest the window. It is designed to be either fully up or fully down. Push the handle towards the window until the crossbar hooks into the catch. To release blind push the handle downwards and gently towards you. This will unhook the catch and the blind can be raised.

The sun screen blind is operated in the same way with the exception that it can be positioned at various 'stop' points.

Caution : with both blinds it is important to guide the blind back into the cassette taking care not to allow it to re-wind too fast as this will damage the spring.

Retensioning

REMIflair blinds are delivered with the correct amount of tension in the spring. However, it may be necessary in the future to adjust the spring. On the left hand side of the cassette you will find two tensioning screws. The top one is for the fly screen and the lower screw is for the sun screen. Rotate clockwise 1 or 2 turns until the correct tension is reached. The blinds should rewind without stopping or in a sluggish manner. Take care not to over tighten the spring.

Cleaning.

Clean the cassette, side tracks and fabrics with warm water and a mild detergent. *Avoid the use of cleaners with solvents or abrasives.*

Caution: it is not recommended to leave the blinds pulled down for long periods of time. This can result in material distortion and spring fatigue.



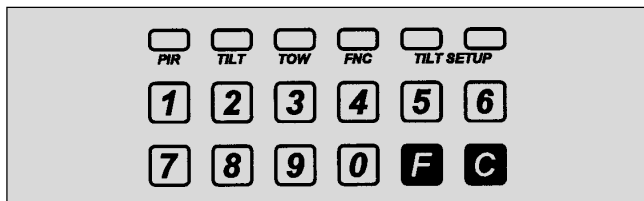
IDM3 / IDM2000 CARAVAN ALARM

Factory Settings

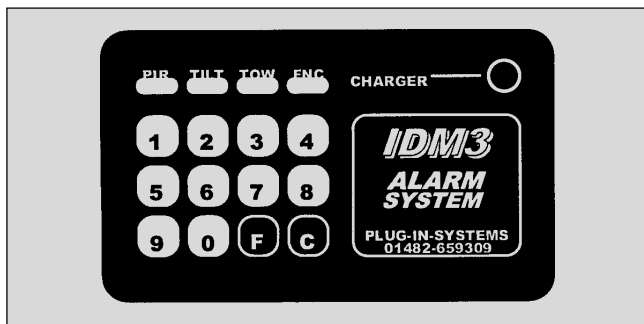
Entry Delay	-	0:00 (0 secs)
Exit Delay	-	0:20 (20secs)
Siren On Time	-	1:00 (1 minute)
Manufacturers Personal Code	-	1234

Operation

Alarm Keypad - IDM2000



Alarm Keypad - IDM3



**IDM3 / IDM2000 CARAVAN ALARM (continued)***Changing the Personal Code*

1. Press “F”, press “1”.
2. Enter the current code. (1234 if new)
3. Enter desired 4 digit code.
4. Press “F”.
5. This operation can be cancelled at any time before step 4 by pressing “C”.

Changing the Entry Delay Time

1. Press “F”, press “0”
2. Enter your personal code.
3. Enter the new entry delay as 3 digits. i.e. 10 seconds is entered 010,
4. Press “F”.
5. This operation can be cancelled at any time before step 3 by pressing “C”.

Note: The Entry Delay Time must be as short as possible to prevent compromising security.

Changing the Exit Delay Time

1. Press “F”, press “2”.
2. Enter your personal code,
3. Enter the new exit delay as 3 digits. i.e. 20 seconds is entered 020, 1 minute is 100. (Please note the maximum time allowed is 4 minutes i.e. 400).
4. Press “F”.

**IDM3 / IDM2000 CARAVAN ALARM** (continued)

5. This operation can be cancelled at any time before step 3 by pressing "C".

Changing the Siren-on Time

1. Press "F", press "3".
2. Enter your personal code,
3. Enter the preferred time as 3 digits, i.e. 2 minutes is entered 200, (please note the maximum time allowed is 4 minutes, i.e. 400)
4. Press "F".
5. This operation can be cancelled at any time before step 3 by pressing "C".

Setting up the Tilt Sensor

The tilt sensor is not adjustable and requires the caravan to be reasonably level. If the Tilt Sensor is active, one of the Tilt Sensor Indicators will illuminate on the keypad. Adjust the level of the van until the light goes off.

Arming the System

If you are in the PIR's line of sight, it is possible that when arming the system, any movement detected by the PIR will deselect the PIR channel. To avoid deselecting the PIR accidentally please ensure that you remain perfectly still when arming the system. This is very important when the keypad is sited within the PIR coverage area.

1. Enter the personal code, the indicators for all available sensors will light (If a sensor indicator fails to light, see "TROUBLESHOOTING").
2. To Disable any sensors not required, press the relevant key, i.e. 1 for PIR, 2 for tilt, 3 for tow sensor. Repeated pressing will select (light comes on) and disable (light goes off) the relevant sensor.



IDM3 / IDM2000 CARAVAN ALARM (continued)

3. Press "F". The exit delay will begin, 1 pulse per second.
4. 2 short bursts on the siren will be heard at the end of the exit delay. This confirms the system is armed.
5. This operation can be cancelled at any time before step 4 by pressing "C".

Disarming the System

1. Enter your personal code. (This is the only way to disarm the system)
2. If the system has been inactive all indicators will flash twice on the keypad.
3. If a sensor has been activated then the corresponding light on the keypad will flash five times. However if the system had been continuously active for 20 minutes or more (and subsequently reset) there will be a random flashing of indicators preceding the display of the sensor(s) responsible.

Note: When the siren is active there is no limit on key entries. When the siren is inactive a maximum of 16 key entries are allowed. If 16 key entries are exceeded then the system will not accept any more entries until the siren is activated.

Memory Recall

This enables the user to tell if any sensors were active during the previous armed state.

1. Press "F", press "5"; watch the indicators.
2. If all indicators flash twice the system has been quiet.
3. If any indicator flashes 5 times, the corresponding sensor has been active.
4. A random flashing of indicators followed by 5 flashes for sensor(s) means that the system has had to reset (i.e. disarm itself) due to the siren being active for 20 minutes.



GENERAL MAINTENANCE

Exterior

The exterior bodywork of your caravan is very durable and easy to keep 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 leather off. Do not forget to clean the roof. A good quality car wax may be applied, which will make washing even easier. Under no circumstances use any abrasive agents, methyated spirit or white spirit on the exterior of your caravan.

Do not clean your caravan using washing up liquid.

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. The gas bottle storage locker must not be loaded in such away that pressure is exerted on the front body panel as this will cause the panel to crack.

Warning: The use of high pressure water jets to clean your caravan will invalidate your warranty.

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 etc.

NB. Never polish with a dry cloth.



GENERAL MAINTENANCE (continued)

Window Catches and Stays

Turn catch arm to the vertical position to open. A night vent position is available by locking 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.

Caution: Always ensure that windows are fully closed during wet weather and not on night vent setting.

Interior

Wax polish may be used on furniture.

The interior walls have a 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.

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.

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:

- i. Remove as much excess as possible with a dry clean cloth.



GENERAL MAINTENANCE (continued)

- ii. Sponge the affected area with warm soapy water taking care not to soak the material.
- iii. Leave to dry in normal conditions.

These actions will not affect the FR treatment of the fabric.

Heavy soiling will require professional cleaning.

Curtains

All fabrics will fade to some degree if exposed to direct sunlight, particularly natural fibres such as cotton etc.

Caution: Curtains should not be left closed during daytime otherwise some fading will be experienced.

Dry cleaning only recommended.

Caution: No Ethylene based cleaning material must be used.

Hinges and Catches

Lightly oil occasionally.

Carpets

Vacuum periodically to remove grit and to ensure long life.

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.



GENERAL MAINTENANCE (continued)

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).

Caution: Domestic cleaning products are not to be used to clean the shower/vanity unit plastic items.

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.

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.



GENERAL MAINTENANCE (continued)

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.

For Systems:

1. Drain down the system. (Open all taps 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

**GENERAL MAINTENANCE** (continued)

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.



FIRE AND SAFETY PRECAUTIONS

Warning: 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.

Children

Warning: 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.

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.

In Case of Fire

- i. 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.
- ii. Raise the alarm - Call the Fire Brigade (in the UK dial 999).
- iii. Turn off gas container valve if safe to do so.



FIRE AND SAFETY PRECAUTIONS (Continued)

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.

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.

Warning: Under no circumstances should the caravan ventilation be covered, blocked or tampered with in any way.

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.

Original Equipment Appliances

See sections devoted to individual appliances.

Warning: Replacement parts for any appliance shall conform to the appliance manufacturer's specification; and should be fitted by them or an authorised agent.



FIRE AND SAFETY PRECAUTIONS (Continued)

Portable Appliances

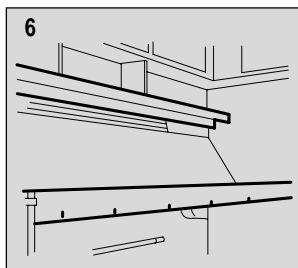
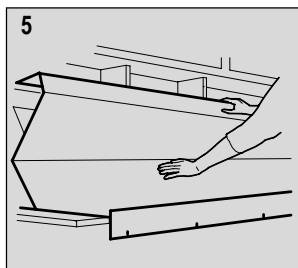
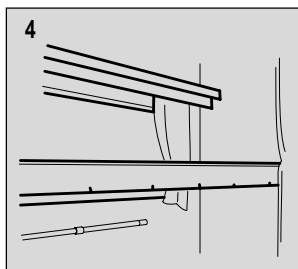
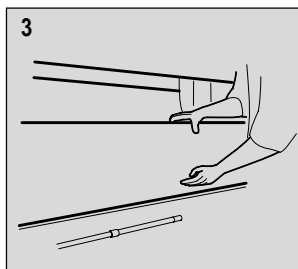
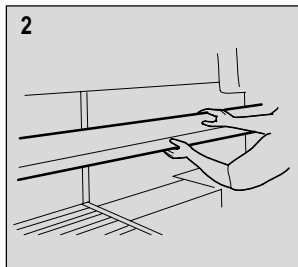
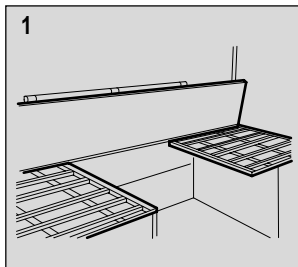
Warning: Never use portable cooking or heating equipment, other than electric heaters that are not of the direct radiant type, as it is a fire and asphyxiation hazard.

Modifications

Warning: Never allow modification of electrical or LPG systems and appliances except by qualified persons.



ASSEMBLING THE BUNKS





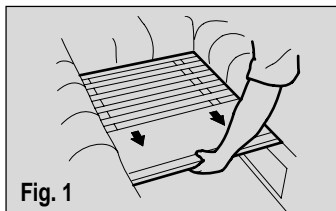
ASSEMBLING THE BUNKS (continued)

Lift up Bunk

- i. Remove cushions and draw the curtains.
- ii/iii. Holding bunk in both hands pull it inwards whilst lifting upwards.
- iv. The bunk mechanism will automatically lock in the up position.
- v. Release retaining straps on the underside of bunk base. The second half of the bunk base can now be hinged open.
- vi. Turn the turnbuckle catches located on the metal bunk legs to ensure that the bunk cannot be folded by pushing up from below.
- vii. The metal safety rails and ladder can now be slotted into position.

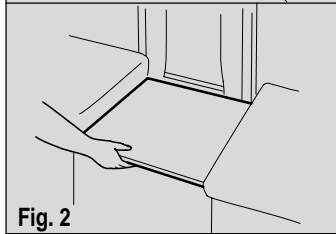
Slatted Bed (Fig. 1)

- i. Grasp front rail.
- ii. Walk backward holding rail until bed is fully extended.
- iii. Arrange seat cushions to suit.



Side Dinette Bed (Fig. 2)

- i. Remove table from support leg.
- ii. Place the table top between seats on ledge.
- iii. Arrange seat cushions as appropriate.



Warning: When children, especially those under 3 years of age, use any bunk/bed care must be taken against the risk of them falling out.



WATER SYSTEM - FAULT FINDING

FAULT - *Water not flowing from any tap when operated but pump runs*

Cause

Freshwater tank empty
 Pump wired in reverse

Pump not primed
 Pipe inlet or outlet pipe disconnected
 Pump pipes restricted by kinking
 Blockage in pump inlet or outlet pipe
 Blocked in-line filter or pump filter
 Air leak in suction line to pump

Cure

Check
 Check wiring, refer to pump manufacturers' instructions
 Refer to pump manufacturers' instructions
 Check connections
 Check pipe runs
 Check, starting inside freshwater tank
 Dismantle and clean
 Check for bubbles & secure with a clip

FAULT - *Pump does not run*

Cause

Pump or tap incorrectly wired
 Pump fuse blown

Battery disconnected
 Pump seized or overheated

If a pressure pump is being used, pressure sensing switch may have failed
 If a switched tap is being used, the switch may have failed

Cure

Refer to pump/tap manufacturers' instructions
 Check wiring connections and then replace with fuse of correct rating
 Check connections
 Refer to pump manufacturers' servicing instructions
 Refer to tap manufacturers' servicing instructions
 Refer to pump manufacturers' servicing instructions

FAULT - *Water flows from cold tap but has reduced flow from hot*

Cause

Feed pipe to water heater incorrectly connected to the heater outlet
 Blockage in hot pipeline
 Heater inlet or outlet pipes kinked preventing flow
 Hot tap not connected
 Hot tap failed or blocked
 Heater non-return valve jammed

Cure

Refer to installation instructions

Disconnect pipes and inspect
 Check and re-route if necessary. Ensure that hose is Carver recommended type
 Refer to installation instructions
 Disconnect and inspect
 Seek service attention



WATER SYSTEM - FAULT FINDING (continued)

FAULT - *Water flows from hot tap but has reduced flow from cold*

Cause

Cold water pipe kinked preventing flow
Blockage in cold pipe line

Cold tap not connected
Cold tap failed or blocked

If a Carver Crystal water service unit is fitted the cartridge is exhausted

Cure

Check and re-route if necessary
Disconnect pipes after 1st Y connector and check up to tap
Refer to installation instructions
Disconnect and inspect

Replace cartridge

FAULT - *Reduced flow from both hot and cold taps*

Cause

Battery condition low causing pump to run slowly

If new taps have been fitted they may be restricting flow

Pump needs servicing

Partially blocked pump filter or in-line filter, if fitted

Pump outlet pipe kinked restricting flow

Water leak

Cure

Check battery state of charge refer to electrical supply note

Disconnect and check that they have at least Ø (6.3mm) bore

Refer to pump servicing instructions

Dismantle and clean if necessary

Check and re-route if necessary

Check all water connections

FAULT - *Reduced flow from either taps*

Cause

'Y' connector(s) fitted incorrectly

Pipe kinking restricting flow

Bore size difference in taps

Cure

Refer to installation instructions

Check and re-route if necessary

Use taps of equal bore size

**WATER SYSTEM - FAULT FINDING** (continued)**FAULT - *Warm water flow out of cold tap*****Cause**

Hot water back feeding into cold line, usually if mixer tap or single outlet hot and cold taps are being used

Cure

Fit non-return valve in cold supply near tap

FAULT - *Water Heater pressure relief valve venting water***Cause**

Pressurised water system pump switching pressure too high
Switched tap water system pump flow rate is greater than tap flow rate capacity

Cure

Refer to water supply note

Refer to water supply note

FAULT - *Water heater difficult to drain***Cause**

Drain plug partially blocked and/or drain screw at top left hand corner of outside cowl not open
Hot taps not open preventing air entering hot system to let water out.
Loops hanging in pipe runs

Cure

Remove plug entirely and/or turn screw 1/4 turn

Open taps

Refer to installation instructions



ROOM HEATER - FAULT FINDING

FAULT - Heater will not light

Symptoms	Cause	Cure
<i>Spark visible</i>	No gas. Bottle temperature too low	Check bottle and taps. See gas supply notes.
	Regulator malfunction.	See gas supply notes.
	Overgassed. Refer to lighting instructions.	Turn off. Wait 3 mins.
<i>No spark.</i>	Piezo failure.	Seek service attention.
	HT lead shorting to earth or broken.	Check and insulate or repair.

FAULT - Heater lights

Symptoms	Cause	Cure
<i>Goes out when knob is released.</i>	Knob released too soon or not fully depressed.	Refer to lighting instructions.
	Thermocouple or valve failure.	Seek service attention.
<i>Goes out after a time.</i>	Bottle temperature too low.	See gas supply notes.
	Chimney intake or flue partly blocked.	Check and clear.
<i>Goes out when door is slammed.</i>	Flue disconnected or damaged.	Turn heater out immediately.
		Seek service attention.

FAULT - Blown Air

Symptoms	Cause	Cure
<i>Not working.</i>	Supply fuse blown.	Replace.
<i>Running slowly.</i>	Hair or dust in fan wheel. Check balance of blown air system and close/open to balance system	Electrically isolate and clear with brush.
<i>Blowing on one leg of system only.</i>	12 V systems only:- Supply reversed.	Correct.



BRAKE FAULT FINDING CHART — AL-KO

FAULT - *Braking is one-sided*

Cause

Incorrect adjustment at wheel.
 Brake cable seized.
 Brake lining contaminated with grease.

Cure

Adjust as described.
 Free off cable or replace.
 Replace brake shoe assemblies.

FAULT - *The trailer brakes during mild decelerations*

Cause

Shock absorber in overrun device weak or ineffective.
 Brakes overadjusted.

Cure

Examine and replace if necessary.
 Re-adjust as described.

FAULT - *The trailer brakes snatch when braking*

Cause

Brakes overadjusted.
 Brake cable sticking.
 Brakes under adjusted.

 Shock absorber weak or ineffective.
 Drawshaft sticking.

Cure

Re-adjust as described.
 Examine, free off cable or replace.
 Check complete brake transmission system and re-adjust if necessary.
 Replace.
 Check over full stroke, lubricate if necessary.

FAULT - *Brake judder*

Cause

Linings contaminated with grease.
 Failure of bond between lining and shoe.
 Distorted/cracked drum.
 Drums have rusty patches on braking surface.

Cure

Replace brake shoe assemblies.
 Replace brake shoe assembly.
 Replace.
 Clean up with sandpaper and wipe out with meths.

FAULT - *Trailer brakes lock up when reversing*

Cause

Brakes overadjusted.
 Reverse lever not functioning.

Cure

Re-adjust as described.
 Check action and rectify.

**BRAKE FAULT FINDING CHART — AL-KO (continued)****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.

FAULT - *Hot brakes***Cause**

Brakes overadjusted.
Hub bearings overtight.
Pull-off spring broken.
Seized cables.

Cure

Re-adjust as described.
Re-adjust as described.
Replace spring.
Free off or replace.

FAULT - *Handbrake will not hold trailer on slope***Cause**

Incorrect adjustment at spring cylinder.

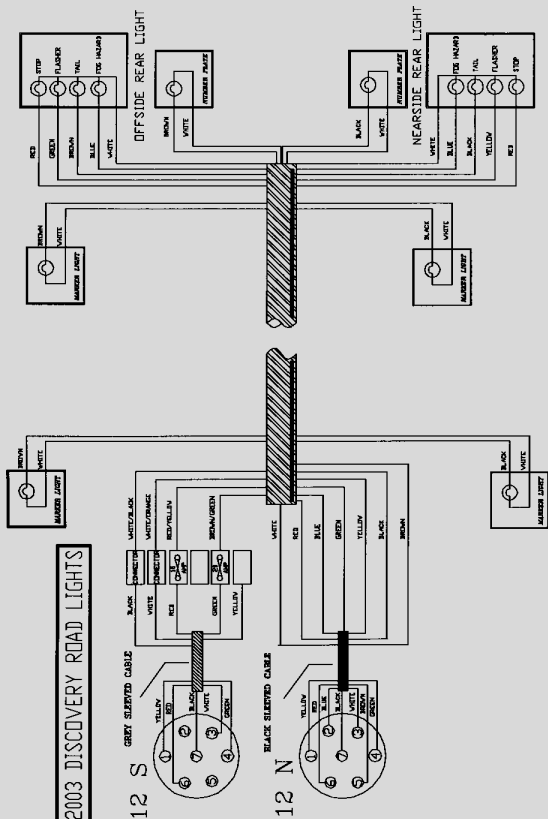
Cure

Re-adjust as described.



ROADLIGHT WIRING — Discovery

2003 DISCOVERY ROAD LIGHTS

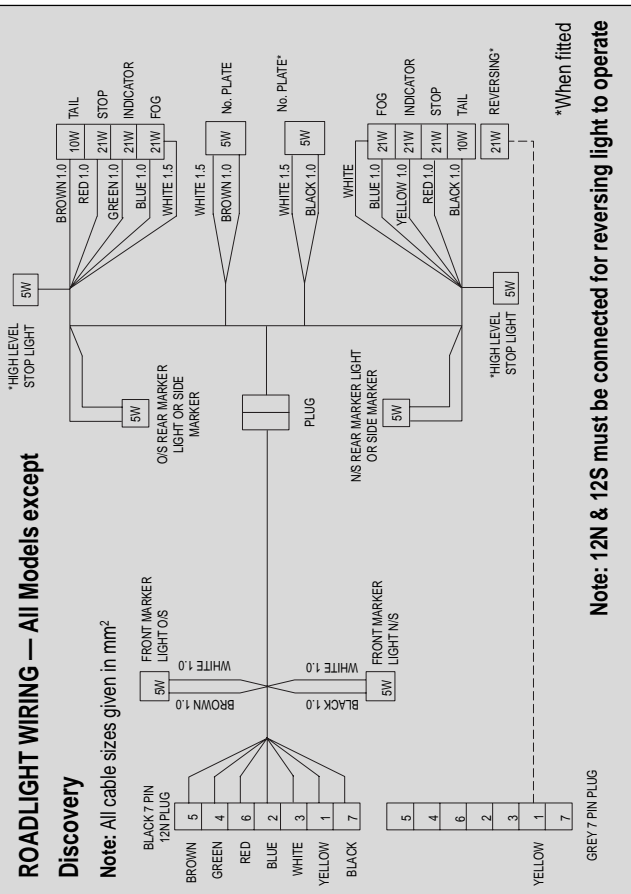




ROADLIGHT WIRING — All Models except

Discovery

Note: All cable sizes given in mm²



*When fitted

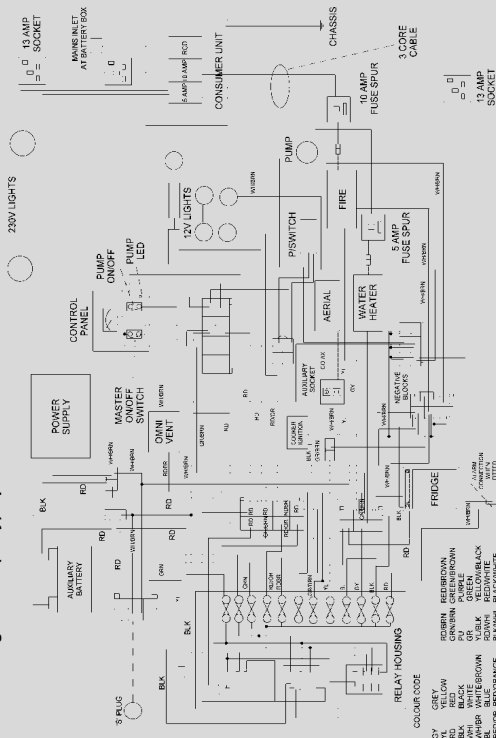
GREY 7 PIN PLUG

Note: 12N & 12S must be connected for reversing light to operate



230 VOLT & 12 VOLT PRIMARY CIRCUIT DIAGRAM - PAGEANT

Required car wiring for 12S (Grey) 7 pin socket



Note: When the 12S plug is connected to the towcar and ignition switched on only the fridge and caravan battery charge circuits will be activated. With the car ignition switched off the permanent live supply from the car can be utilised.

DIMENSIONS & SPECIFICATIONS

MODEL	BERTHS	INTERNAL BODY LENGTH	SHIPPING LENGTH	OVERALL BODY WIDTH	OVERALL HEIGHT	MAXIMUM HEADROOM	TYRE SIZES	TYRE PRESSURE (P.S.I./BAR)
RANGER 380/2	2	3.759m	5.240m	2.19m	2.71m*	1.90m	185/65 R14 L190	37/2.6
RANGER 460/2	2	4.547m	6.050m	2.19m	2.71m*	1.90m	185/65 R14 L190	39/2.7
RANGER 460/2 L	2	4.547m	6.050m	2.19m	2.71m*	1.90m	185/65 R14 L190	39/2.7
RANGER 470/4	4	4.731m	6.200m	2.19m	2.71m*	1.90m	185/65 R14 L190	42/2.9
RANGER 500/5	5	5.159m	6.610m	2.19m	2.71m*	1.90m	195/70 R14 L196	37/2.6
RANGER 510/4	4	5.159m	6.610m	2.19m	2.71m*	1.90m	195/70 R14 L196	37/2.6
RANGER 550/6	6	5.508m	6.990m	2.19m	2.71m*	1.90m	195/70 R14 L196	37/2.6
PAGEANT MAJESTIC	2	4.115m	5.810m	2.19m	2.71m*	1.90m	185/65 R14 L190	39/2.7
PAGEANT IMPERIAL	2	4.731m	6.390m	2.19m	2.71m*	1.90m	195/70 R14 L196	35/2.4
PAGEANT MONARCH	2	4.731m	6.390m	2.19m	2.71m*	1.90m	195/70 R14 L196	35/2.4
PAGEANT AUVERGNE	5	5.258m	6.920m	2.19m	2.71m*	1.90m	195/70 R14 L196	42/2.9
PAGEANT CHAMPAGNE	4	5.258m	6.920m	2.19m	2.71m*	1.90m	195/70 R14 L196	39/2.7
PAGEANT LOIRE	4	5.258m	6.920m	2.19m	2.71m*	1.90m	195/70 R14 L196	39/2.7
PAGEANT MOSELLE	4	5.258m	6.920m	2.19m	2.71m*	1.90m	195/70 R14 L196	37/2.6
PAGEANT BORDEAUX	4	5.258m	6.920m	2.19m	2.71m*	1.90m	195/70 R14 L196	42/2.9
PAGEANT VENDEE	4	5.508m	7.210m	2.19m	2.71*	1.90m	195/70 R14 L196	42/2.9

NOTES:

The M.T.P.L.M. should not be exceeded. The maximum towing speed at M.T.P.L.M. for all models is 81mph (130km/h).

The maximum vertical static load for the coupling head or the maximum vertical load on the towing ball specified for the towing vehicle should not be exceeded.

* Includes roof mounted TV aerial which is easily removable should reduced overall height be required.

DIMENSIONS & SPECIFICATIONS (continued)

MODEL	AWNING SIZE	MAXIMUM TECHNICAL PERMISSIBLE LADEN MASS	M.R.O.	MASS OF ESSENTIAL HABITATION EQUIPMENT EFFECTS	PAYLOAD ALLOWANCE FOR PERSONAL EQUIPMENT	PAYLOAD ALLOWANCE FOR OPTIONAL EQUIPMENT	TOTAL USER PAYLOAD
RANGER 380/2	785cm	1034kg	843kg	75kg	94kg	22kg	191kg
RANGER 460/2	864cm	1118kg	919kg	75kg	102kg	22kg	199kg
RANGER 460/2 L	864cm	1134kg	935kg	75kg	102kg	22kg	199kg
RANGER 470/4	885cm	1172kg	952kg	75kg	123kg	22kg	220kg
RANGER 500/5	928cm	1272kg	1037kg	75kg	138kg	22kg	235kg
RANGER 510/4	928cm	1239kg	1014kg	75kg	128kg	22kg	225kg
RANGER 550/6	963cm	1300kg	1052kg	75kg	151kg	22kg	248kg
PAGEANT MAJESTIC	828cm	1135kg	960kg	75kg	97kg	3kg	175kg
PAGEANT IMPERIAL	889cm	1191kg	1010kg	75kg	103kg	3kg	181kg
PAGEANT MONARCH	889cm	1208kg	1027kg	75kg	103kg	3kg	181kg
PAGEANT AUVERGNE	942cm	1338kg	1121kg	75kg	139kg	3kg	217kg
PAGEANT CHAMPAGNE	942cm	1302kg	1095kg	75kg	129kg	3kg	207kg
PAGEANT LOIRE	942cm	1313kg	1106kg	75kg	129kg	3kg	207kg
PAGEANT MOSELLE	942cm	1285kg	1078kg	75kg	129kg	3kg	207kg
PAGEANT BORDEAUX	942cm	1345kg	1123kg	75kg	129kg	18kg	222kg
PAGEANT VENDEE	967cm	1319kg	1112kg	75kg	129kg	3kg	207kg

NOTES:

The M.T.P.L.M. should not be exceeded. The maximum towing speed at M.T.P.L.M. for all models is 81mph (130km/h).

The maximum vertical static load for the coupling head or the maximum vertical load on the towing ball specified for the towing vehicle should not be exceeded.

* Includes roof mounted TV aerial which is easily removable should reduced overall height be required.

Overall height with TV aerial removed is 2.68m.

Wheel rim size: 5 1/2J x 14H2 ET30, 112mm PCD 5 Stud.

DIMENSIONS & SPECIFICATIONS (continued)

MODEL	BERTHS	INTERNAL BODY LENGTH	SHIPPING LENGTH	OVERALL BODY WIDTH	OVERALL HEIGHT	MAXIMUM HEADROOM	TYRE SIZES	TYRE PRESSURE (P.S.I/BAR)
SENATOR VERMONT	2	4.842m	6.520m	2.19m	2.71m*	1.90m	195/70 R14 LI96	42/2.9
SENATOR ARIZONA	4	5.508m	7.250m	2.19m	2.71m*	1.90m	185 R14 LI104	55/3.8
SENATOR OKLAHOMA	4	5.508m	7.250m	2.19m	2.71m*	1.90m	185 R14 LI104	55/3.8
SENATOR WYOMING	4	6.320m	8.060m	2.19m	2.71m*	1.90m	185/65 R14 LI90	29/2.0
SENATOR MONTANA	5	6.320m	8.060m	2.19m	2.71m*	1.90m	185/65 R14 LI90	29/2.0
DISCOVERY 100	4	4.547m	6.050m	2.19m	2.71m	1.90m	185/65 R14 LI90	39/2.7
DISCOVERY 200	4	4.731m	6.200m	2.19m	2.71m	1.90m	185/65 R14 LI90	39/2.7
DISCOVERY 300	5	4.731m	6.200m	2.19m	2.71m	1.90m	185/65 R14 LI90	42/2.9
DISCOVERY 400	5	5.159m	6.610m	2.19m	2.71m	1.90m	195/70 R14 LI96	35/2.4

NOTES:

The M.T.P.L.M. should not be exceeded. The maximum towing speed at M.T.P.L.M. for all models is 81mph (130km/h).

The maximum vertical static load for the coupling head or the maximum vertical load on the towing ball specified for the towing vehicle should not be exceeded.

* Includes roof mounted TV aerial which is easily removable should reduced overall height be required.

DIMENSIONS & SPECIFICATIONS (continued)

MODEL	AWNING SIZE	MAXIMUM TECHNICAL PERMISSIBLE LADEN MASS	M.R.O.	MASS OF ESSENTIAL HABITATION EQUIPMENT EFFECTS	PAYLOAD ALLOWANCE FOR PERSONAL EQUIPMENT	PAYLOAD ALLOWANCE FOR OPTIONAL EQUIPMENT	TOTAL USER PAYLOAD
SENATOR VERMONT	895cm	1333kg	1080kg	113kg	115kg	25kg	253kg
SENATOR ARIZONA	967cm	1472kg	1203kg	113kg	131kg	25kg	269kg
SENATOR OKLAHOMA	967cm	1491kg	1222kg	113kg	131kg	25kg	269kg
SENATOR WYOMING	1042cm	1657kg	1359kg	113kg	140kg	45kg	298kg
SENATOR MONTANA	1042cm	1705kg	1388kg	113kg	159kg	45kg	317kg
DISCOVERY 100	864cm	1104kg	857kg	75kg	122kg	50kg	247kg
DISCOVERY 200	882cm	1122kg	874kg	75kg	123kg	50kg	248kg
DISCOVERY 300	882cm	1171kg	913kg	75kg	133kg	50kg	258kg
DISCOVERY 400	925cm	1203kg	920kg	75kg	148kg	60kg	283kg

NOTES:

The M.T.P.L.M. should not be exceeded. The maximum towing speed at M.T.P.L.M. for all models is 81mph (130km/h).

The maximum vertical static load for the coupling head or the maximum vertical load on the towing ball specified for the towing vehicle should not be exceeded.

* Includes roof mounted TV aerial which is easily removable should reduced overall height be required.

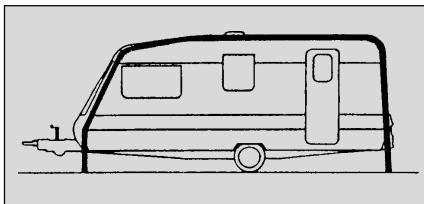
Overall height with TV aerial removed is 2.68m.

Wheel rim size: 5 1/2J x 14H2 ET30, 112mm PCD 5 Stud.

AWNING SIZES

The following are the ground to ground dimensions through the awning channel. These dimensions are issued as a guideline only, please refer to your dealer for the correct awning size to suit your particular caravan.

DISCOVERY	100	864 cms
	200	882 cms
	300	882 cms
	400	925 cms
RANGER	380/2	785 cms
	460/2	864 cms
	460/2L	864 cms
	470/4	885 cms
	500/5	928 cms
	510/4	928 cms
PAGEANT	550/6	963 cms
	Majestic	828 cms
	Imperial	889 cms
	Monarch	889 cms
	Auvergne	942 cms
	Champagne	942 cms
	Loire	942 cms
	Moselle	942 cms
	Bordeaux	942 cms
SENATOR	Vendee	967 cms
	Vermont	895 cms
	Arizona	967 cms
	Oklahoma	967 cms
	Wyoming	1042 cms
Montana	1042 cms	



Always ensure mastic is applied to any fixing screwed to the caravan exterior panels.

BULB, TUBE & FUSE SPECIFICATION

ROAD LIGHTS

Front Marker light	12 volt	5 watt	Push in (QH)
Side Marker light	12 volt	5 watt	MBC
Brake lights	12 volt	21 watt	SBC
Road lights	12 volt	10 watt	SBC
Fog lights	12 volt	21 watt	SBC
Indicator lights	12 volt	21 watt	OBC
Number plate light	12 volt	10 watt	SBC
Brake (high level) x 2	12 volt	5 watt	Festoon
Reversing light	12 volt	21 watt	SBC

INTERIOR LIGHTS

Fluorescent lights (Front, Rear, Kitchen)	12 volt	8 watt	
Fluorescent light (Toilet Ceiling)	12 volt	8 watt	
Halogen lights	12 volt	10 watt	QH
Spotlight	12 volt	15 watt	SBC
Bathroom Spotlight	12 volt	10 watt	Push-in (QH)
Mains Light	240 volt	25 watt	ES
Mains Reading light	240 volt	40 watt	SES
Awning light	12 volt	10 watt	SBC

FUSES

Caravan Battery -	10 amp blade (red)
Caravan Battery +	15 amp blade (red)
Charger +	15 amp blade (blue)
Permanent live supply from car +	10 amp blade (red)
Permanent live supply from car -	10 amp blade (red)
Fridge	15 amp blade (blue)
Pump	10 amp blade (red)
Auxiliary 1	10 amp blade (red)
Auxiliary 2	10 amp blade (red)
Lights	10 amp blade (red)
Truma Ultrastore	230 volt 5 amp cartridge
Refrigerator	230 volt 3 amp cartridge
Truma Ultraheat	230 volt 10 amp cartridge
Clock battery	E90 - LR1 - N - 1.5 volt
Smoke alarm battery	9 volt

ANNUAL SERVICE

To qualify for the factory backed warranty your caravan must be serviced /moisture tested by an approved Bailey Service Centre every 12 months (or within 6 weeks of each anniversary of purchase) in accordance with the NCC recommended service schedule and the following moisture test.

STANDARD DAMP CHECK FOR TOURING CARAVANS

Caution: The following damp check must be carried out every 12 months by a Bailey Caravans approved repair centre.

Equipment

A calibrated damp meter should be used which should comply with the minimum specification laid down below.

Measurement range	6% to above fibre saturation in wood (to nominal 100%)
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Resolution	± 0.1%
------------	--------

Operating Temperature Range	-10 to + 45°C
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The meter should be fitted with an adjustable audible alarm and be battery powered.

Method

Readings should be taken in each position marked on Diagram 1. Care should be taken when readings are made to ensure that readings are accurate. It is important to make sure that probes are free of moisture and the surface being checked is free from condensation.

All readings should be taken in a position where the holes created by the meter's probe are not visible, ie behind rubber seals, in bedboxes or in cupboards.

ANNUAL SERVICE (continued)

Results

Readings between 0 - 20% are considered acceptable.

Readings greater than 20% will identify areas needing further investigation and possibly remedial work.

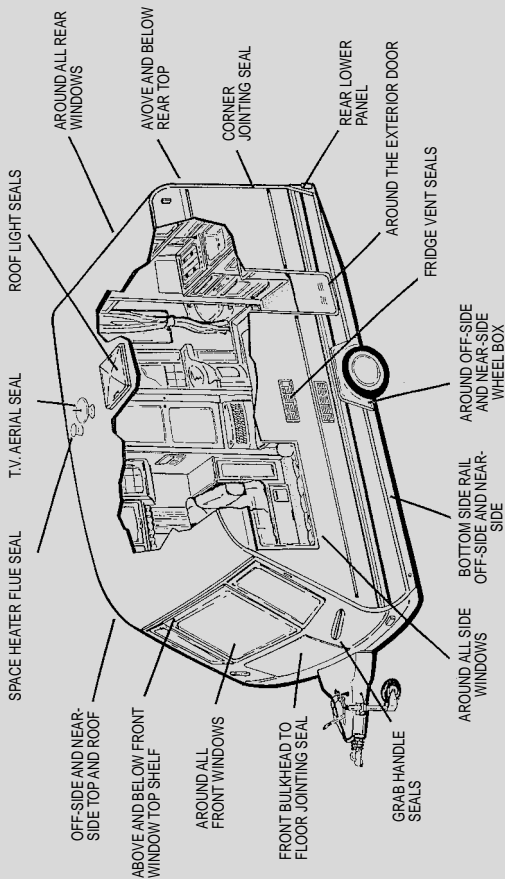
THERMAL INSULATION HEATING GRADE

All Bailey caravans are manufactured and approved by the National Caravan Council to EN1645-1 thermal insulation and heating classification grade 2.

Grade 2 is classified as being able to achieve an average temperature difference of 20°C between inside and outside the caravan when the outside temperature is 0°C.



Recommended annual moisture test



3000 MILES OR 12 MONTHS AFTER DELIVERY STANDARD DAMP CHECK	6000 MILES OR 2 YEARS AFTER DELIVERY STANDARD DAMP CHECK
<i>DEALER STAMP</i>	<i>DEALER STAMP</i>
DATE VIN No.	DATE VIN No.
9000 MILES OR 3 YEARS AFTER DELIVERY STANDARD DAMP CHECK	12000 MILES OR 4 YEARS AFTER DELIVERY STANDARD DAMP CHECK
<i>DEALER STAMP</i>	<i>DEALER STAMP</i>
DATE VIN No.	DATE VIN No.

15000 MILES OR 5 YEARS AFTER DELIVERY STANDARD DAMP CHECK	18000 MILES OR 6 YEARS AFTER DELIVERY STANDARD DAMP CHECK
<i>DEALER STAMP</i>	<i>DEALER STAMP</i>
DATE VIN No.	DATE VIN No.
21000 MILES OR 7 YEARS AFTER DELIVERY STANDARD DAMP CHECK	24000 MILES OR 8 YEARS AFTER DELIVERY STANDARD DAMP CHECK
<i>DEALER STAMP</i>	<i>DEALER STAMP</i>
DATE VIN No.	DATE VIN No.



NOTES

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