

RECREATIONAL VEHICLE MANUFACTURERS ASSOCIATION OF AUSTRALIA

RVMAA OWNERS HANDBOOK

The Association under its full name set out above is incorporated under the Associations Incorporation Act 1981.

Among its principal purposes are:

- a) to promote, develop and advance the scientific and technical aspects of manufacturing, selling and dealing in or in any way disposing of, recreational vehicles.
- b) to disseminate among members, scientific technical and other beneficial knowledge in respect to the recreational vehicle industry.

The Association in furtherance of its aims, maintains close contact with its manufacturer members, and carries out its own inspection and assessment of the standard of manufacture of its members products.

While every care is taken in carrying out the inspection and assessment, the Association accepts no responsibility for failing to discover latent defects or imperfections not discoverable by external examination.

It is important for all new Recreational Vehicle owners to adhere to this owners manual and to the manual, specifications and warranties of items such as wheels, axle, tyres, brakes, couplings, stove, refrigerator, gas cylinders, rangehood, microwave, batteries, toilets, hot water systems, battery chargers, airconditioners and awnings that are supplied to the RV manufacturer by sub suppliers.

Each of these items carries a separate warranty from the warranty supplied by the RV manufacturer. It is important that at all times owners should operate within the recommended procedures in order to enjoy many thousands of trouble free kilometres.

This manual should be kept in a safe place for future reference.

Because your new Recreational Vehicle represents a significant personal investment it is important that you consult with the manufacturer of the vehicle or the manufacturer of component parts as listed above before attempting any repairs. Your RV manufacturer will happily supply details on where your RV can be serviced or repaired anywhere in Australia. Sometimes problems arise through misunderstandings between the customer and the manufacturer. In order to avoid these circumstances it is desirable to contact your dealer or manufacturer to receive advice on how servicing or repairs should be carried out.

It is strongly recommended that all owners insure their Recreational Vehicle for accidental damage, personal liability, theft, collision, property damage, hail, lightning strike, storm & tempest and flood insurance, if appropriate.

This manual has been prepared to enable RV owners to receive the maximum enjoyment and utility from their vehicles. The guidelines and recommended practice have been prepared by qualified engineers based on experience over many years. If they are followed, many pitfalls will be avoided.

There is nothing worse than having to postpone or cancel a planned holiday because for one reason or another the RV is unserviceable.

The owner should acquaint himself or herself with the time limits of warranties applying to the vehicle and its component parts as specified by the manufacturer and sub suppliers.

If defects occur within the warranty period, reference to the manual will help the owner to seek redress.

All information contained in this owners handbook is the property of the Recreational Vehicle Manufacturers Association of Australia and may not be copied in whole or in part without written permission of the R.V.M.A.A.

All information contained herein is correct at the time of printing. However, this information is supplied as a guide only and does not substitute the warranty conditions as laid down by individual RV or component manufacturers or suppliers. You must adhere to warranty conditions and procedures as supplied with your Recreational Vehicle.

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RV's or Recreational Vehicles include camping trailers : Poptops : Caravans : Camper Vans: Camper Conversions : Motor Homes and Slide on Campers

AIR CONDITIONERS

All manufacturers provide operating instructions with their product and it is recommended that these be read carefully to ensure correct operation. Also, complete and return your Warranty Card/Certificate as this will assist you should a problem occur at a later date.

The following information has been supplied by Aircommand Australia Pty Ltd who have service agents throughout Australia. (08) 8445 2877.

AIR CONDITIONERS (AIRCOMMAND)

Roof Top Models

These units are virtually maintenance free except for return air filters, which should be kept clean for optimum performance. (Wash in warm soapy water.)

Approximately six months after installation you should check the hold down bolts as they may require tightening.

Do not be alarmed if, when the unit is in operation you see water running from the roof as this will be the condensate from the air conditioner. In humid conditions there will be more condensate than normal.

Split Systems

As with roof top models, ensure the return air filters are kept clean.

Some models of split systems require holes cut in the floor for the condenser fan to draw air. Regular travel will not cause any problems to the condenser with dust/dirt/water entering the unit. It is important that these holes are not covered in any way, or the operation of the unit will be seriously affected and could in fact seize the motor.

Should you be travelling for long periods “off road” where excessive dirt (bull dust) or water (creek crossings) can enter, it is recommended you contact the manufacturer for advice.

General Operation and Helpful Hints

- Air conditioners should not be run at full thermostat for long periods of time, this setting is used mainly for testing purposes. Also note that if the outside temperature is only 22° - 23° the unit may not switch on to cooling as this is deemed to be a “comfortable temperature”. So if you

take delivery of your RV in winter and wish to test the operation of the air conditioner, it will be necessary to firstly warm the RV interior to above 23°C.

- With reverse cycle units, the air conditioner should be turned off for 3 minutes before switching to the opposite operation e.g. cooling to heating.
- Always assist the “heat load” inside your RV by parking in the shade if possible, using roll out awnings to shade windows and closing curtains. Try also to eliminate other areas where heat can infiltrate i.e. hatches etc.

The following information has been supplied by Electrolux Finch who have service agents throughout Australia Ph (03) 9545 5655.

AIR CONDITIONERS (ELECTROLUX)

Maintenance

Air Filters: Periodically remove the return air filters located above the removable panels in the air box. Wash the filters with soap and warm water, let dry and then reinstall.

NOTE: Never run the air conditioner without return air filters in place. This may plug the unit evaporator coil with dirt and may substantially affect the performance of the unit.

Service (Unit does not operate)

If your unit fails to operate or operates improperly, check the following before calling your service centre.

- a) If the van is connected to a motor generator, check to be sure the motor generator is running and producing power.
- b) If the RV is connected to a power supply by electrical lead, check to be sure the lead is of 15 AMP capacity to run your air conditioner load and that it is plugged into the power supply.
- c) Check your fuse or circuit breaker.
- d) In the airconditioner air box, check to be sure the air conditioner conduit is plugged into the selector switch box.

- e) After the above checks, call your local service centre for further help. This unit must be serviced by qualified service personnel only.

When calling for service, always give the air conditioner Model Number, Product Number, and Serial Number. This information can be found on the unit rating plate located on the airconditioner base pan. To locate these, remove the return air grill from the air box and look up through the roof opening in the ceiling.

The following information has been supplied by Coast to Coast RV Services - 32 Station Street, Dundas NSW 2117 Ph (02) 9684 1434

AIR CONDITIONERS (COLEMAN)

Maintenance - Owner

One of the biggest advantages to your new RV Products air conditioner is that the maintenance needed to keep the unit in good care is minimal. In fact, about the only thing that you, the owner, must take care of is the cleaning and replacement of the filter. The filter is a vital part of every air conditioning system. If the filters are not cleaned at regular intervals they may become partially clogged with lint, dirt, grease etc. A clogged filter will produce a loss of air volume and may eventually lead to the icing up of the cooling (evaporator) coil.

Important

Do not operate the air conditioner for extended periods of time without the filter installed.

When this happens the lint, dirt, grease etc. that is normally stopped by the filter are now accumulating in the cooling coil. This not only leads to a loss of cooling volume and a possible icing up of the cooling coil, but could also result in serious damage to the operating components of the air conditioner.

We recommend that filters be replaced or cleaned at least every two weeks when the air conditioner is in operation.

Cleaning and/or changing the filters

1. Remove the selector switch and thermostat knobs from the ceiling assembly.

2. Remove the screws that secure the ceiling shroud to the ceiling assembly.
3. Lower the shroud and gently slide it off the two control shafts.
4. Take filters out and either clean or exchange with other filters.

Short Cycling

When an air conditioner is in operation, its compressor circulates refrigerant under high pressure. Once off, it will take two to three minutes for this high pressure to equalise.

The air conditioning compressor is unable to start against high pressure. Therefore, once the air conditioner is turned off, it is important to leave it off for two to three minutes before restarting.

Short cycling the compressor (or starting it before pressures have equalised) will in some instances, kick the circuit breaker or overload.

Note

- Should icing-up occur, it is necessary to let the cooling (evaporator) coil defrost before normal cooling operation is resumed. During this time, operate the unit in the “HIGH FAN” position with the system at maximum airflow. When increased or full airflow is observed the cooling coil should be clear of ice.
 - The air conditioner should be inspected periodically to be sure that the bolts that secure the unit to the roof are tight and in good shape.
-

ALUMINIUM

The aluminium sheeting on the outside of your RV should only be cleaned with warm soapy water. Never use abrasive materials or cutting compounds as this could seriously deteriorate the baked paint finish on the aluminium. Build up of road tar or bird droppings can be removed with a diluted solution of mineral turps. This should be applied only to the surface that needs cleaning and it should be immediately rinsed off with warm soapy water.

ANTENNAS

Antennas should always be securely stowed away while travelling and although there are many types of antenna on the market quite often the simpler types are very effective for television reception and are much easier to store when travelling. In the case of high winds, antennas should be removed and stored away as the structures are not designed to withstand strong wind conditions.

AWNINGS

The cleaning of vinyl material on rollout awnings should only be done with warm soapy water. Never use any strong detergent or mineral based cleaners to clean the vinyl on your awning as it could lead to discolouring. The aluminium supporting arms to the awning should not need greasing or oiling and when storing your awning away for any period of time the awning should be completely and thoroughly dry to avoid mildew build up on the vinyl surfaces.

Awning or rope tracks fitted will greatly benefit from the occasional application of sprayable silicone to aid the sliding in and out of your awning or annexe.



Wheel Nuts - for 1/2" dia. studs the torque tension is 150 Nm. For 7/16" dia. studs 125 Nm.



Familiarise yourself with the location and the instructions for use on your fire extinguisher.

BATTERIES

Batteries installed in Recreational Vehicles should be kept charged even while stored away. General maintenance on the batteries should be carried out in a similar way to car batteries. Water levels should be maintained and any corrosion around the terminals should be removed.

BATTERY CHARGERS

Battery chargers that operate from 240 V are designed for low frequency charging or trickle charging and it is necessary sometimes for flat batteries to be recharged for at least 48 hours on the trickle charging method before a considerable amount of current can be stored in the battery. In the case of battery chargers you should refer to the supplier's manual for further information.

BRAKES

Your RV is fitted with electric or mechanical brakes. These brakes may from time to time need adjusting. It is suggested that all RV's be returned to the dealer after approximately 2000 km to check the brake adjustment. If brake adjustment is required during or prior to this time you should contact the nearest dealer or your original RV manufacturer to ensure that this brake adjustment is carried out by an authorised person. **THIS IS A SERVICE FUNCTION NOT A WARRANTY ITEM.**

If this RV is fitted with electric brakes you should consult the electric brake handbook as supplied with the RV at the initial time of delivery.

The warranty card on the brakes should be filled out and returned to the brake supplier in order that your warranty is registered.

BRAKES (AL-KO)

The following information is supplied with the consent of AL-KO INTERNATIONAL PTY LIMITED suppliers of electric brakes to the Australian RV industry. AL-KO have offices in

Victoria	<i>59 Wedgewood Road HALLAM VIC 3803</i>	<i>Telephone: (03) 9796 3700 Facsimile: (03) 9796 3711</i>
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New South Wales *14 Toohey Road* *Telephone: (02) 725 4655*
WETHERILL PARK *Facsimile: (02) 725 4557*
NSW 2164

Queensland *62 Parramatta Road* *Telephone: (07) 3808 3030*
UNDERWOOD QLD *Facsimile: (07) 3808 1719*
4119

OPERATORS SERVICE & WARRANTY (ELECTRIC BRAKES)

HOW YOUR ELECTRIC BRAKES OPERATE

The electric trailer brakes perform a similar function to the brakes on your car. The major difference is that the car brakes use hydraulic pressure to expand the brake shoes, whilst the trailer brakes use an electro magnet and lever system. Activation of the electric brakes is via a controller mounted inside your towing vehicle.

The controller provides both manual application of the trailer brakes or automatic braking synchronised to that of your towing vehicle (when you push the brake pedal in the car, the brakes on the trailer are also activated via the brake controller). When the controller is activated high capacity electro magnets are energised and attract to the inside surface of the brake drum. Due to the rotation of the drum, the magnets move the lever arm in the same direction. This movement causes the actuating block at the top of the brake to push the front shoe against the drum. The force of the front shoe in turn pushes the back shoe into contact with the drum.

Brake performance is proportional to the load of the towing vehicle and the trailer. **ENSURE AT ALL TIMES THAT THE TOWING CAPACITY OF THE CAR AND THE MANUFACTURERS RECOMMENDED LADEN WEIGHT IS NOT EXCEEDED.**

HOW THE BRAKE CONTROLLER WORKS

Once properly installed and adjusted the brake controller can be operated both automatically and manually. When the brakes are applied the controllers electric circuit is operated automatically. As the tow vehicle slows down a sensor inside the controller reacts to the deceleration and increases the power to the trailer brakes, thus providing smooth and proportional braking of the trailer. For manual operation, the controller is provided with a sliding control. This activates the stop lights and the

brakes, and the indicator light on the front of the controller panel glows from dim to bright the further the control is moved, indicating an increase in braking power.

WARNING

There are several different types of brake controllers sold, some with motion sensors and some without a motion sensing device. If a brake controller without motion sensor is used the trailer brakes will not be applied in proportion to the vehicle and smooth synchronised braking will not be achieved. If further information is required please contact AL-KO International.

More detailed information on the operation of the controller is available in the installation instructions contained with each unit.

FITTING TRAILER BRAKES

Electric trailer brakes when used and adjusted properly provide many kilometres of smooth, dependable braking operation.

Electric trailer brakes must have a complete electrical circuit, any broken or poor wire connections will prevent or interfere with the flow of electrical power resulting in poor or no braking.

All electrical connections should be soldered or made via screw type connectors.

On new trailers a break-in period may be required to achieve maximum braking performance.

Proper Brake Balance Between Your Vehicle and Trailer

The brakes on your towing vehicle are designed to stop in a safe effective manner, similarly the electric brakes fitted to your trailer are designed to effectively stop the weight of the trailer to which they are fitted.

It is important that the performance of the brakes on both the towing vehicle and the trailer are balanced so that neither are overloaded. If the correct balance is not obtained between the braking systems, then overheating of either system may occur with a deterioration in brake performance. Correct brake balance is obtained when the trailer brakes have a slight lead over the brakes on the towing vehicle. This can be accomplished by the adjustment of the controller in the towing vehicle.

When correctly adjusted there will be no sensation of the trailer pushing the vehicle, nor any excessive pull during braking.



PROPER BRAKING



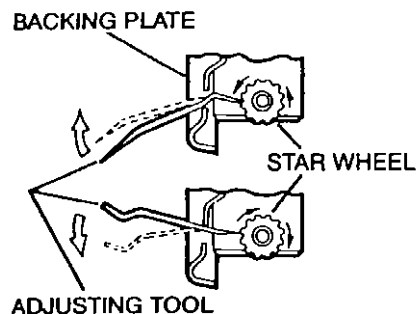
GENERAL MAINTENANCE

In order to maintain the safe reliable stopping power of your AL-KO brake system it is recommended that the brakes be serviced at regular intervals.

The following list of general maintenance items should be carried out as a periodic maintenance check.

1. Brake Adjustment Procedure

Located in the back of the brake backing plate is a small opening covered by a protective plug. With the trailer wheels off the ground, rotation of the star wheel, (as shown in the diagram below), will result in correct brake adjustment. With a screw driver rotate the star wheel until the brake drag makes it difficult to turn the wheel. The star wheel can then be turned in the opposite direction to allow the trailer wheel to turn $\frac{3}{4}$ to 1 revolution freely when spun.



2. Brake Drum/Hub

The brake drum should be checked for excessive wear in accordance with the periodic maintenance check list on page 17.

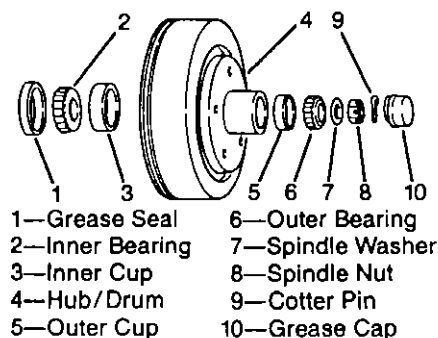
- If the drum has heavy scoring, or has a run out that exceeds 0.5mm it should be machined by your local Service Centre.
- If the bore of the drum exceeds the maximum diameter cast on the drum, it should be replaced.
- Brake drums that have been machined must be thoroughly cleaned and checked before installation.
- If magnet wearing surface on the inside of the drum is unevenly worn or badly scored, we suggest that the drum be referred to AL-KO International for machining or replacement.

Note: Anytime the drum is replaced a new magnet should also be installed.

3. Wheel Bearings

Bearings must be inspected and lubricated periodically to ensure reliable, safe operation of your trailer. We recommend that your trailer be taken to your local Service Centre where correct wheel bearing service can be undertaken.

If you need to remove a hub drum from your trailer, the diagram below shows the correct sequence to follow.



- Seals should be checked and replaced if found to be nicked, torn or worn.

- If the bearings are damaged or worn they should be referred to your local Service Centre where replacement may be recommended.

Note: It is recommended to replace the bearings and cups in sets.

- Always lubricate the bearings on your trailer with high quality wheel-bearing grease.
- Every time the wheel hub is removed, the wheel bearings must be adjusted.

To Adjust the Wheel Bearings

Turn the hub slowly to seat the bearings while tightening the slotted nut until firm.

Loosen the slotted nut and then re-tighten by hand (not with a wrench) to a “finger-tight” condition to align the first notch with the hole in the shaft and insert the split pin. It is recommended that bearing adjustment be carried out by your local Service Centre to ensure that correct bearing adjustment is maintained.

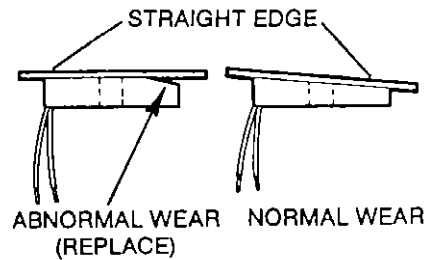
4. Brake Linings

Periodic inspection for lining wear or contamination from oil or grease should be undertaken by your local Service Centre.

- If the lining is worn to within 0.8mm of the rivet or to a minimum thickness of 1.5mm on bonded linings or shows irregular wear or contamination from a foreign substance, shoes should be replaced with the original parts from your local Service Centre.

5. Magnet Assembly

The magnet assembly can be inspected for wear, without removing it from the brake, by laying a straight edge over the length of the magnet space as shown.



Magnets may be used with normal wear until the white plastic under the friction element is barely visible. Replacement magnets are available from your local Service Centre.

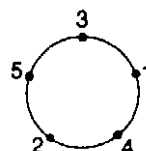
6. Wheel Mounting

It is important to maintain proper torque specifications to provide safe and secure attachment of the wheel to the hub drum.

- Start all nuts by hand to prevent cross threading.
- Tighten nuts in three stages using a cross star pattern.
- Whenever wheels are removed and refitted the wheel nut torque should be checked. Wheel nuts should be tightened to a torque of 150 Nm (110 ft lb) for ½” diameter wheel stud threads or 125 Nm (90 ft lb) for 7/16” diameter wheel stud threads.

It is recommended that the wheel nut tension be checked every 100 km for the first 400 km of your initial trailer use and then as per the periodic maintenance check list on page 17.

- Tighten wheel nuts using a cross star pattern as shown below:



7. Park Brake Cable Adjustment

In the **laden** condition it is imperative that the park brake lever engages and secures the brakes in the 5th or 6th notch of the coupling from the towball end - not closer.

Failure to adjust the cable tension in this manner will, through suspension movement on both independent suspension and beam axle with leaf springs, cause the brake shoes to be partially actuated and excessive heating of the brake and drums to occur. Prolonged use, if incorrectly adjusted, will cause initially the back (secondary shoe) to overheat to the extent of disintegration of the brake lining and will result in deterioration of brake performance until eventual brake failure.

PERIODIC MAINTENANCE CHECK LIST

CHECK	FUNCTION REQUIRED	DAILY	EVERY 5000 KM OR 6 MONTHS	EVERY 10,000 KM OR 12 MONTHS
Trailer Brakes	Test that they are functioning properly.	☞		
Air Pressure	Inflate tyres to manufacturer's specifications.	☞		
Wheel Nuts*	Tighten to proper torque specifications. As below*			
Wheel Rims	Inspect for dents, damage, or out of round.		☞	
Brake Adjustment**	De-Dust. / Inspect for lining wear and adjust.			☞
Brake Magnets	Inspect for uneven wear.			☞
Wheel Bearings and Cups	Inspect for wear or damage and lubricate.			☞
Hub/Drum	Inspect for heavy scoring or wear			☞
Seals	Inspect for damage or wear.			☞
Brake Linings	Inspect for lining wear and contamination			☞
Park Brake	Inspect for excessive travel and adjust			☞

* Tighten wheel nuts every 100 km for the first 400 km and after every change in wheel mounting or every 1000 km or six months for the life of the RV.

** Adjust brakes and de-dust after first 300 km then at above intervals.

TROUBLE SHOOTING GUIDE

FAULT	CAUSE	CHECK FOR
No Brakes	No electrical power	<ul style="list-style-type: none"> • Poor connections • Break in electrical circuit • Blown fuse • Controller setting
No Brakes	Worn magnets	<ul style="list-style-type: none"> • Replace with genuine parts from AL-KO
No Brakes	Incorrect brake shoe clearance	<ul style="list-style-type: none"> • Adjust brakes
Weak Brakes	Loose electrical connection	<ul style="list-style-type: none"> • Check all connections
Weak Brakes	Worn out linings	<ul style="list-style-type: none"> • Replace with genuine parts from AL-KO
Weak Brakes	Worn out drum	<ul style="list-style-type: none"> • Remachine or replace if oversize
Weak Brakes	Excessive load	<ul style="list-style-type: none"> • Reduce trailer load
Weak Brakes	Lining contaminated	<ul style="list-style-type: none"> • Replace linings and seals with genuine parts
Intermittent Brakes	Broken magnet wire	<ul style="list-style-type: none"> • Bench check magnets and replace with genuine parts
Intermittent Brakes	Loose wire connections	<ul style="list-style-type: none"> • Check all wire connections
Intermittent Brakes	Out of round drum	<ul style="list-style-type: none"> • Remachine drum
Intermittent Brakes	Loose wheel bearings	<ul style="list-style-type: none"> • Check and adjust wheel bearings
Locking Brakes	Malfunctioning controller	<ul style="list-style-type: none"> • Check and replace if necessary
Locking Brakes	Stop lights connected in brake circuit	<ul style="list-style-type: none"> • Check wiring of controller and trailer
Locking Brakes	Loose brake parts	<ul style="list-style-type: none"> • Check for loose rivets, broken springs etc.
Locking Brakes	Worn wheel bearings	<ul style="list-style-type: none"> • Replace bearings • Examine hub
Locking Brakes	Out of round drum	<ul style="list-style-type: none"> • Remachine drum

*The following information has been supplied by Melbourne Trailer & RV Supplies Pty Ltd, 333 Warrigal Road, Cheltenham 3192
Ph (03) 9585 0700 Fax (03) 9585 1426*

BRAKES (MELBOURNE TRAILER & CARAVAN SUPPLIES PTY LTD)

Maintenance Hints : DEXTER BRAKES

- a) Before any synchronisation adjustments are made, your trailer brakes should be burnished-in by making 10-12 full stops from approximately 35 km/h.
- b) Brakes should be adjusted after the first 300 km of operation when the brake shoes and drums have “seated”.
- c) Your trailer brakes must be inspected and serviced every 10,000 km.
- d) Do not use grease or oil on the brake linings, drums or magnets.
- e) The most common electrical problem is low or no voltage and amperage at the brakes. (Refer magnet amperes chart).
- f) Bearings must always be replaced in sets of a cone and cup.
- g) Be sure to wear safety glasses when removing or installing force fitted parts.
- h) For maximum bearing life it is recommended that you revolve your wheels periodically (every 2-3 weeks) during periods of prolonged storage.

Magnet Amperes Chart

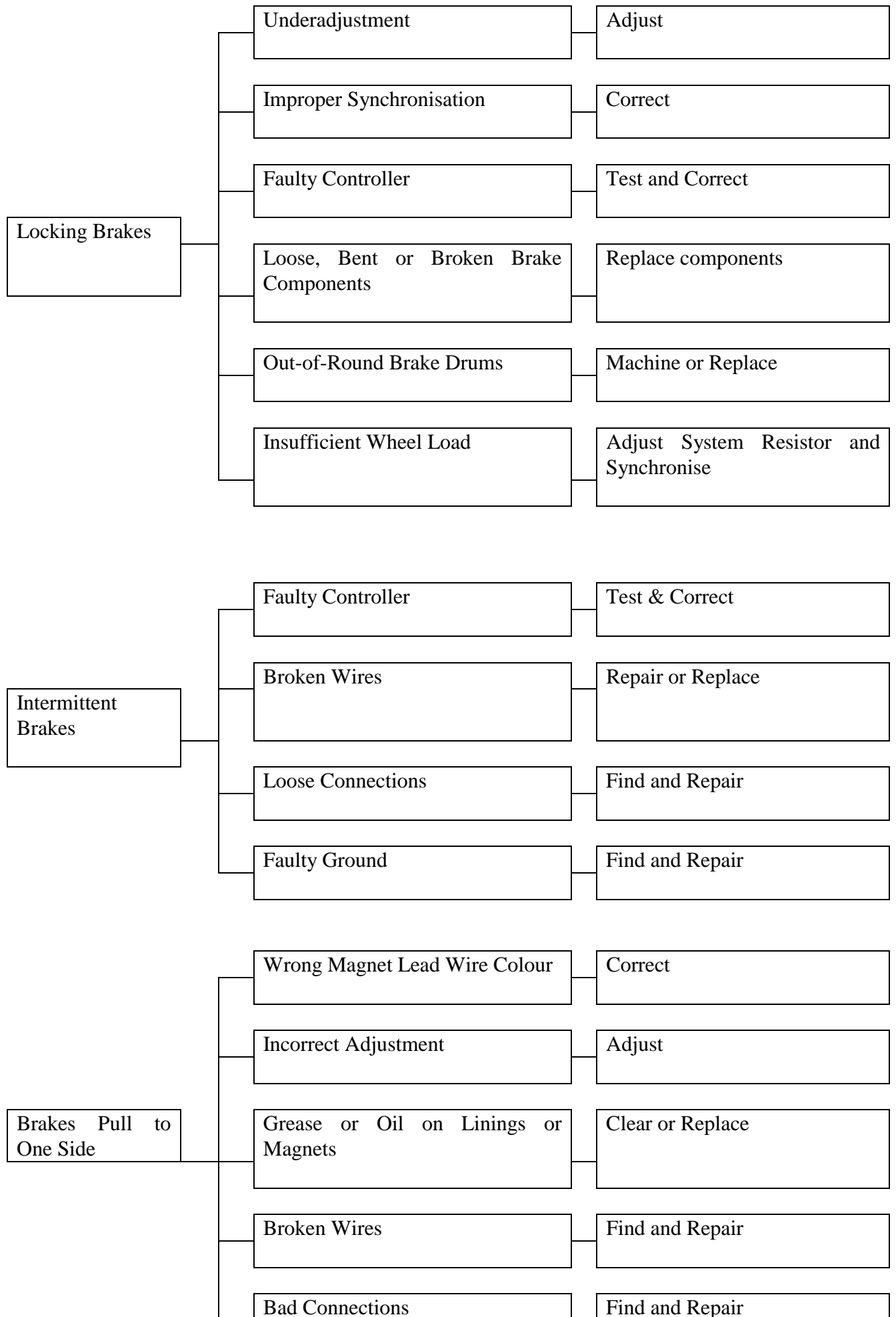
BRAKE SIZE	AMPS/MAGNET	TWO BRAKES	FOUR BRAKES	SIX BRAKES
7 x 1¼	2.5	5.0	10.0	15.0
10 x 1¼	3.0	6.0	12.0	18.0
10 x 2¼	3.0	6.0	12.0	18.0
12 x 2	3.0	6.0	12.0	18.0
12¼ x 2¼	3.0	6.0	12.0	18.0
12¼ x 3 ¾	3.0	6.0	12.0	18.0

Maintenance Schedule

ITEM	FUNCTION REQUIRED	WEEKLY	3 MONTHS OR 5000 KM	6 MONTHS OR 10000 KM	12 MONTHS OR 15000 KM
Brakes	Test they are operational	At every use			
Brake Adjustment	Adjust to proper operating clearance		•		
Brake Magnets	Inspect for wear and current draw			•	
Brake Linings	Inspect for wear or contamination				•
Brake Controller	Check for correct amperage & modulation			•	
Brake Cylinders	Check leaks, sticking				•
Brake Lines	Inspect for cracks, leaks, kinks				•
Trailer Brake Wiring	Inspect wiring for bare spots, fray, etc.				•
Breakaway System	Check battery charge and switch operation	At Every Use			
Hub/Drum	Inspect for abnormal wear or scoring				•
Wheel Bearings & Cups	Inspect for corrosion or wear. Clean and repack				•
Seals	Inspect for leakage. Replace if removed.				•
Springs	Inspect for wear, loss of arch				•
Suspension Parts	Inspect for loose fasteners, wear.			•	
Hangers	Inspect welds				•
Wheel and Bolts	Tighten to specified torque values		•		
Wheels	Inspect for cracks, dents or distortion			•	
Tyre Inflation Pressure	Inflate tyres to manufacturer's specifications	•			
Tyre Conditions	Inspect for cuts, wear, bulging etc.		•		

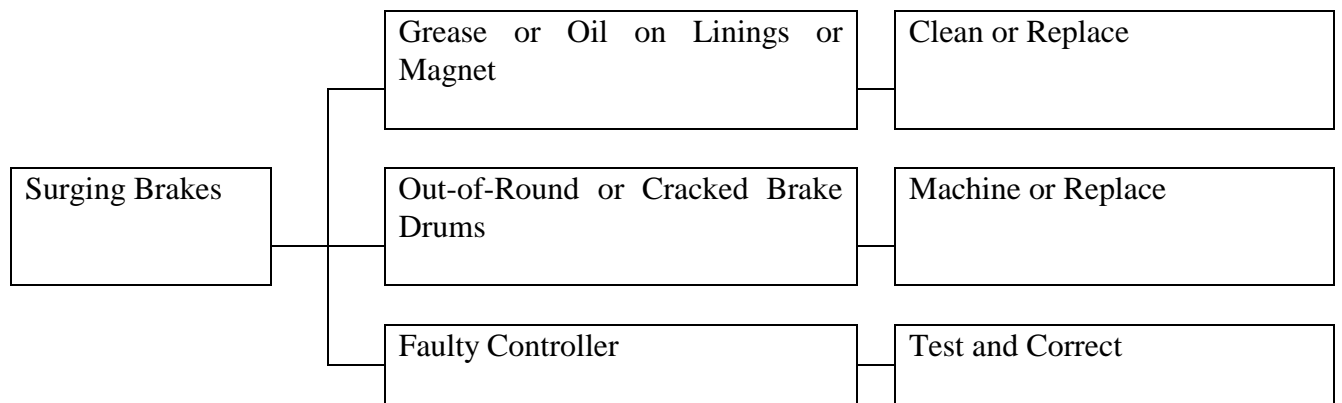
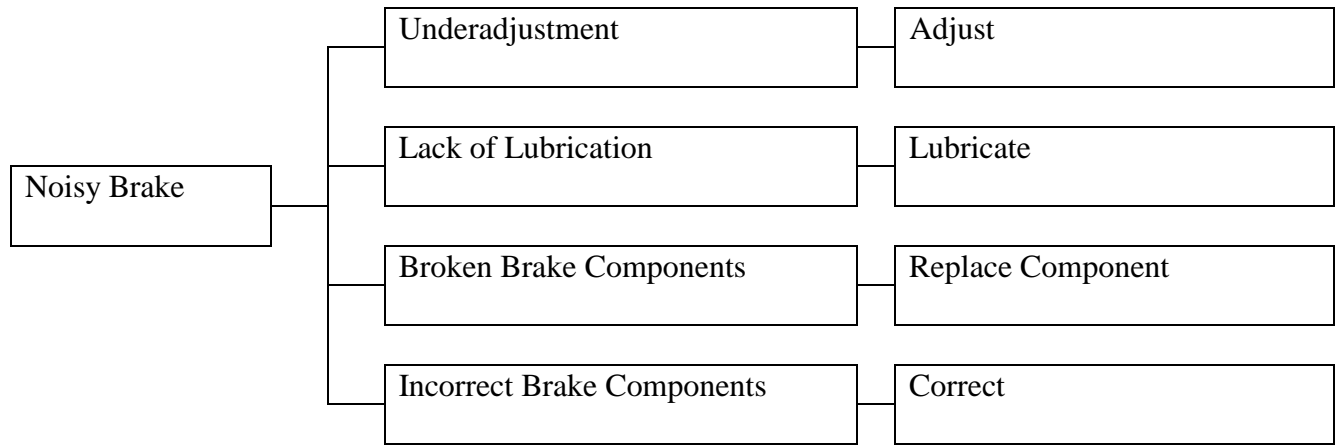
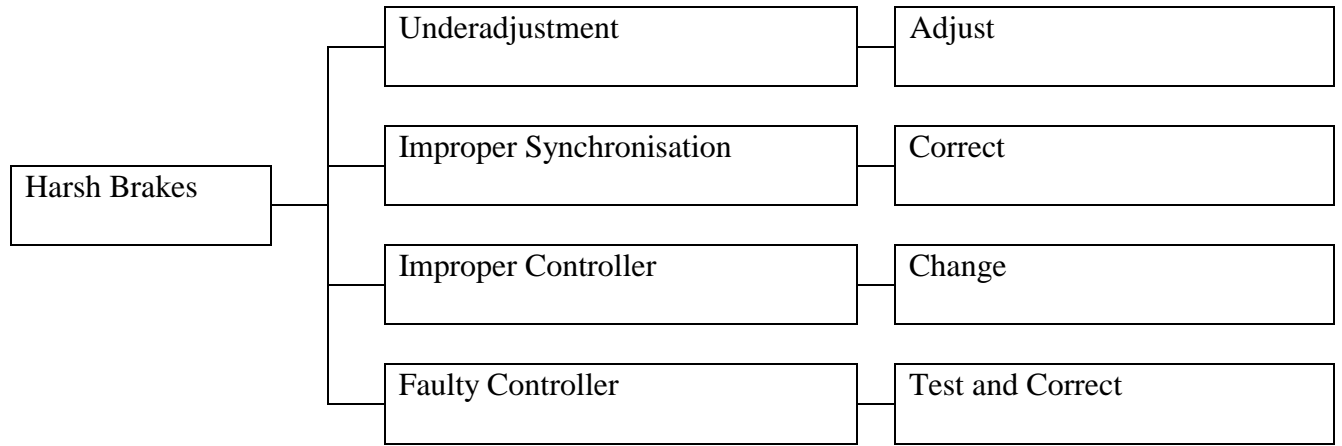
Trouble Shooting

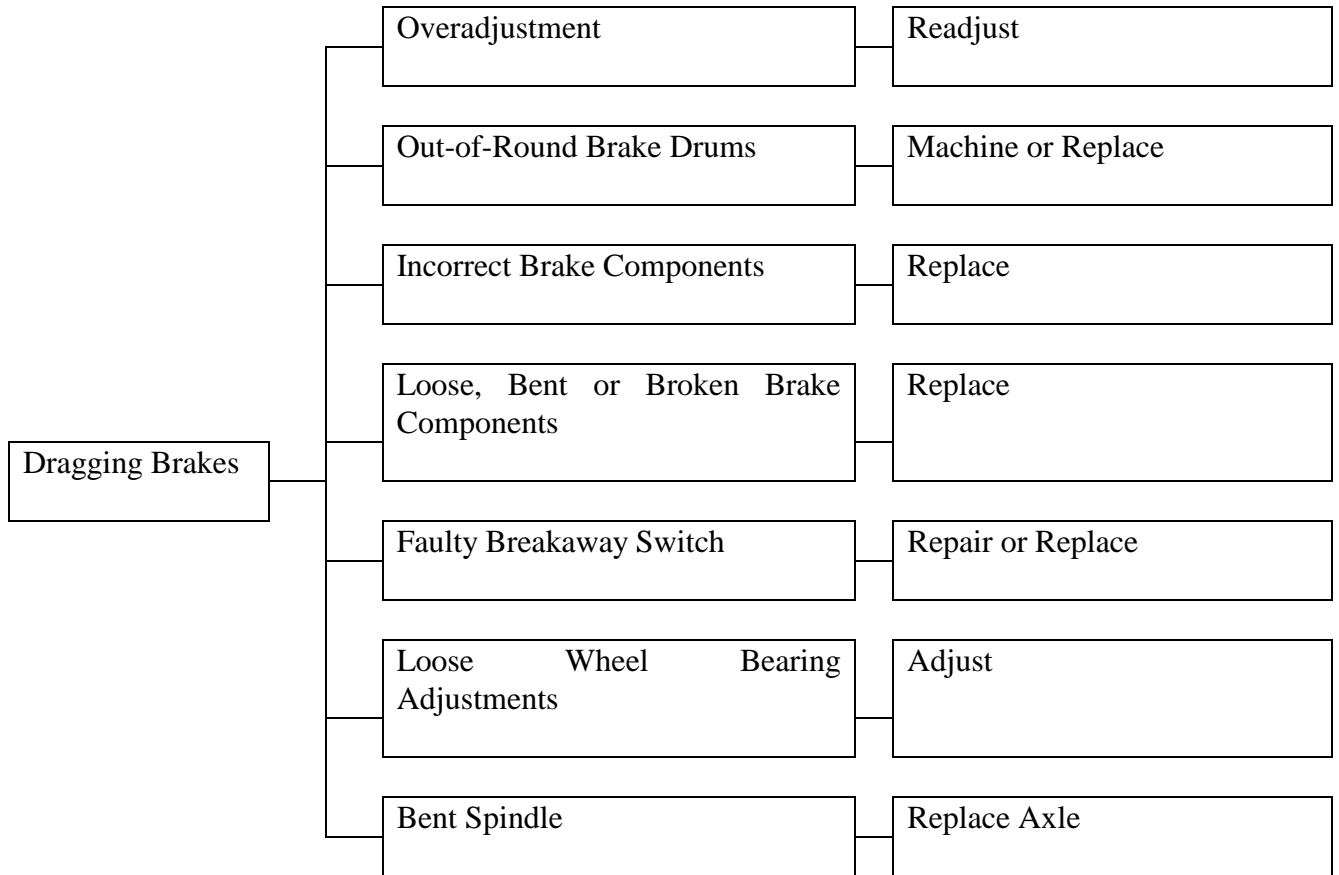
SYMPTOM	CAUSES	REMEDIES
No Brakes	Open Circuits	Find & Correct
	Severe Underadjustment	Adjust Brakes
	Faulty Controller	Test and Correct
	Short Circuits	Find and Correct
Weak Brakes	Grease or Oil on Magnets or Linings	Clean or Replace
	Corroded Connections	Clean & Correct Cause of Corrosion
	Worn Linings or Magnets	Replace
	Scored or Grooved Brake Drums	Machine or Replace
	Improper Synchronisation	Correct
	Underadjustment	Adjust Brakes
	Glazed Linings	Reburnish or Replace
	Overloaded Trailer	Correct



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When towing your RV in high winds remember to reduce your speed.

During windy conditions in open country, crossing bridges and in road hill cuttings, cross winds can be unpredictable and it is important to be alert at all times.

BULBS

It is advisable to carry spare bulbs for interior and exterior lights. Bulbs which are subject to vibration can give trouble and spare bulbs on hand are a must for the experienced RV traveller.

BUMPER BARS

It is important that in the case of bumper bars you continually check for cracks which can appear due to the transmission of vibrations from the RV through to the back bumper bar. This position is sometimes accentuated when a spare wheel or tyre is carried on the bumper bar as this weight can tend to make rear bumper bars crack or fail. So it is important that if a spare wheel and tyre is mounted on the bumper bar that it is only done after consultation with the original manufacturer to ensure that the bumper bar is designed to carry such a spare wheel and tyre. It is not advisable to carry two spare wheels and tyres on the back of any bumper bars.

- **DO NOT CARRY FULL FUEL CONTAINERS ON REAR BUMPER BARS.**
- **DO NOT ADD ADDITIONAL WEIGHT TO REAR BUMPER BARS.**



Warning - Always check that handbrake is released before moving off.

CANVAS

It is advisable when taking delivery of a new canvas annexe or a camper trailer equipped with canvas coverings that this canvas be soaked with water and let to dry twice before using the camper trailer or annexe on an extended trip. The reason for soaking the canvas twice is to allow the stitching to expand into the holes caused by the needle stitching of the canvas and therefore it will tend to make your annexe or canvas cover of your camper trailer more waterproof.

CANVAS ANNEXE

Canvas annexes should be treated in a similar way to awnings and they should always be stored away in a perfectly dry condition. They should be carried in your car not in the front boot or inside on the floor of your RV. This can upset the towing of your RV due to the additional load being placed in the incorrect position.

CHASSIS

It is advisable to annually have a thorough check of the chassis on your Recreational Vehicle. This includes the running gear, suspension, tyres, wheels and brakes and coupling. The chassis is such an important part of your RV you cannot afford to overlook the general maintenance and serviceability of the chassis for the long term viability of your holidays. If in any doubt you should take the RV to your nearest authorised dealer or repairer to ask for a chassis inspection.

CHEMICAL TOILETS

It is only possible to dispose of the contents of the toilet in approved dumping stations or through a normal household sewerage system. This can often be done at caravan parks with the permission of the park owner. However it is advisable to check with the park owner before discharging any toilet material into sewerage lines as the chemical deodorant contained in the toilet can sometimes have effects on the sewerage or septic system of the caravan park. You should refer to the brochure supplied with all chemical toilets for further information on their care and maintenance.

CORNER STABILISERS

Corner stabilisers are designed so that they stop the RV from tipping towards one end as you walk inside the vehicle. They should be lowered to the point where they touch the ground in a firm manner without taking any weight of the vehicle. Remember **THEY ARE NOT JACKS** and

should never be used to take even partial weight of the vehicle. As you move inside the vehicle from end to end you cause more weight to be applied to the stabiliser. Therefore you should never use force on the stabiliser handle to force the stabiliser to the ground thereby taking the weight of the vehicle. Stabilisers that are bent due to excess weight being applied to them are **NOT COVERED UNDER WARRANTY**.

COUPLING

Couplings should be regularly checked for any sign of loose bolts connecting the coupling to the chassis as the two leading bolts on the coupling are always under a lot of strain and it is important that these bolts be regularly checked to ensure that they are tight. It is not advisable to grease the ball of the coupling as this can lead to a build up of dust and thereby create a lot of wear due to abrasion. A silicone spray from a pressure can will be sufficient lubrication for the ball. Light machine oil will also be effective without accumulating dust which could cause excessive wear.



Wheel nuts should be tightened every 100 km for the first 400 km and after every change in wheel mounting or every 1,000 km or 6 months for the life of the RV.

DOOR LOCKS

Door locks are usually made from plastic and should not require any lubrication. However, you should continually check to ensure that your door lock is operating properly and after closing the door that the door is not likely to spring open during travel. This can lead to the door being torn off the vehicle or could cause an accident. So continually check to see that the door lock functions properly.

ELECTRICAL

240 V electrical wiring can only be altered or changed in any way by a certified licensed electrical contractor. Do not attempt any 240 V wiring changes without consultation with an electrician. In the case of any 12 V problem, this can be easily diagnosed by an auto electrician and again it should only be carried out by an authorised auto electrician.

ELECTRIC BRAKE CONTROLLERS

This controller is fitted in your car and is usually of the pendulum type. That is the type that recognises when you apply the brakes in your car and applies an equal amount of braking to your RV automatically. Electric brake controllers should only be serviced and maintained by an authorised auto electrician and you should refer to the manufacturers warranty book for further information on servicing this piece of equipment.

EXTERIOR CARE

The exterior of your RV should be regularly cleaned with soapy water and a brush or broom. Extra care should be taken, when cleaning windows, that a harsh brush is not used on these surfaces as the acrylic in the windows may permanently scratch. In the case of rollout awnings, these should also be occasionally washed with warm soapy water and rinsed clean.

ELECTRICAL SAFETY

Do not make any changes to the circuitry or add on fixed appliances without first consulting the manufacturer. All electrical additions must be carried out by a licensed electrical contractor. Any gas additions or alterations must again be carried out by a licensed gas contractor. Your local dealer can help you with the names of suitable contractors to carry out any of this work.

Any work carried out by persons other than those authorised above will void the warranty on your Recreational Vehicle.

In the case of recreational vehicles you should not connect the 240 V supply until the camper or pop-top is fully erected. If power was connected before these items are erected, any internal lights that are left switched on may cause damage or a fire to the vinyl or canvas section of your pop-top or camper trailer.

FIRE SAFETY

SAFETY ADVICE TO USERS

VENTILATION

Do not obstruct the permanent ventilation openings which are fitted, your safety depends on them.

IN CASE OF FIRE

1. Get everyone out.
2. Turn off outside gas valve at gas cylinder.
3. Disconnect the mains electricity supply.
4. Raise the alarm and call the fire brigade.
5. Attack fire if safe to do so.

FIRE PRECAUTIONS

CHILDREN:

DO NOT LEAVE CHILDREN ALONE

MEANS OF ESCAPE

1. Make sure you know the location and operation of exits.
2. Keep all escape routes clear.

COMBUSTIBLE MATERIALS

Keep them clear of all heating and cooking appliances.

FIRE FIGHTING

This unit has been fitted with a 1kg dry powder fire extinguisher. Familiarise yourself with the location and the instructions for use on your fire extinguisher, and the local fire precaution arrangements.

APPROVED BY: RECREATIONAL VEHICLE MANUFACTURERS ASSOCIATION OF AUSTRALIA



When operating any appliances in this vehicle, combustible materials such as curtains should be restrained in their intended positions and popup roofs should be elevated.

FLOOR COVERINGS, CARPETS AND VINYL

Floor coverings, carpets and vinyls should be maintained in a similar way to maintaining these items in a domestic household situation. They should be regularly cleaned and vacuumed and in the case of vinyl it should only be washed with lukewarm soapy water.



Never attempt to find a gas leak with a match.

Never use cooking appliances for comfort heating.

GAS CYLINDERS

Gas cylinders generally have a life of ten years after which time they have to be restamped and certified by an authorised company to ensure that your gas cylinders are in perfect condition. Where possible, in exposed salty conditions, they should be covered to avoid the build up of rust and you should always ensure that the valve on the gas cylinder is turned off when storing your RV for any length of time.

GAS LEAKS

Never attempt to find a gas leak with a match. You should only detect gas leaks with soapy water and observe any bubbles that are caused by the liquid being applied to the gas joint. Gas leaks can occur due to vibration, particularly underneath the vehicle or where pipes can be damaged by stones or rocks. In the event of you smelling any gas you should immediately

1. extinguish all open flames, pilot lights and smoking materials.
2. keep bystanders away.
3. do not touch electrical switches.
4. shut off the gas supply at the cylinder valve.
5. open doors and any other ventilating openings.
6. leave the area until the odour clears.
7. have the gas system checked and leakage source corrected by an authorised gas installer before using the system again.

GAS SAFETY

GAS SYSTEM

For all vehicles fitted with gas cylinders or appliances the following procedures **must** be followed:

1. Close appliance valves before opening cylinder valve.
2. Check connection at the appliances, regulators and cylinders periodically for leaks with soapy water or its equivalent. This should be done at least annually.
3. Never use a match or flame when checking leaks.
4. Close cylinder valve when appliances are not in use.
5. All appliances must be turned off and cylinder valve closed when not in use or whilst refuelling is in progress.
6. In the event of an accidental gas leak, close cylinder valve and ventilate the RV until air is clear.
7. Never use cooking appliances for comfort heating.
8. In the event of fire, immediately close cylinder valve.
9. Close valve and fit sealing plug to all spare cylinders not connected, whether full or empty.
10. All additions or alterations to the LP Gas system shall be performed by an authorised person. (Consult your LP Gas supplier.)
11. Appliances shall not be altered without authorisation of the manufacturer.
12. Persons should familiarise themselves with the odour of unburnt LP Gas to assist in the early detection of leaks.
13. All permanent ventilators, flues and vents should be checked regularly to ensure that they are clear.

14. After disconnecting a gas cylinder ensure gas line or regulator is covered with tape to stop dirt from entering the gas lines.
15. After connecting a gas cylinder always check connection with soapy water for gas leaks.



Never operate any appliance in a pop-top when the roof is down.

WARNING

If you smell gas -

1. Extinguish all open flames, pilot lights and smoking materials.
2. Keep bystanders away.
3. Do not touch electrical switches.
4. Shut off the gas supply at the cylinder valve.
5. Open doors and other ventilating openings.
6. Leave the area until the odour clears.
7. Have the gas system checked and leakage source corrected by an authorised gas installer before using the system again.



Switch off gas flame in your refrigerator and hot water system before entering a service station or refuelling your car.

GAS/ELEC APPLIANCES

IT IS NOT SAFE TO USE COOKING APPLIANCES FOR COMFORT HEATING. Cooking appliances need fresh air for safe operation. Before operating any cooking appliances open the hatch or in the case of a pop-top ensure the top is open or in the case of a camper trailer that the top is folded out into its normal operating position. Open windows and doors where possible.

LPG CYLINDERS

Always handle LPG cylinders with extreme care. When disconnecting the regulator from the cylinder for refilling purposes be aware that the connecting nut to the cylinder is a lefthand thread. **ALWAYS COVER GAS PIPES AND REGULATOR INLET WITH TAPE AFTER DISCONNECTING GAS CYLINDERS.**

GAS CONNECTIONS

All gas connections are subject to vibration and therefore all gas connections should be checked with a soapy water solution at least annually.

REFRIGERATOR

If an absorption refrigerator is fitted to this Recreational Vehicle it will operate off 240 V, 12 V and LP Gas. It is important that if operating this refrigerator from LP Gas, the refrigerator must be turned off prior to entering any service station site or refuelling of your vehicle. The refrigerator burner, if left alight, could cause a serious accident if refuelling was attempted whilst the flame is burning.

IMPORTANT Never refill a gas cylinder with Auto Gas. Auto gas is a mixture of gases especially formulated for cars, if used in an RV cylinder it could be a health hazard due to the incorrect burning qualities of the gas. RV gas cylinders should only be refilled by authorised refillers using liquid propane gas.



Never exceed the maximum allowable payload as recommended by the RV manufacturer.

HANDBRAKE

The handbrake is located on the coupling on the front of your RV and it is essential that you remember to release this handbrake prior to travelling on every occasion. Should you fail to do so it could cause overheating of the brakes and the hubs and this could deteriorate the grease in the bearings and cause bearing failure as well as overheating of the brakes may cause a fire. IT IS VERY ESSENTIAL THAT THE RELEASE OF THIS HANDBRAKE BE CARRIED OUT PRIOR TO TRAVELLING.

HAND BRAKE ADJUSTMENT

In the **laden** condition it is imperative that the park brake lever engages and secures the brakes in the 5th or 6th notch of the coupling from the towball end - not closer.

Failure to adjust the cable tension in this manner will, through suspension movement on both independent suspension and beam axle with leaf springs, cause the brake shoes to be partially actuated and excessive heating of the brake and drums could occur. Prolonged use, if incorrectly adjusted, will cause initially the back (secondary shoe) to overheat to the extent of disintegration of the brake lining and will result in deterioration of brake performance until eventual brake failure.

HAND PUMPS

Hand pumps can sometimes be caused to malfunction due to kinking of the water supply line from the tank to the pump. In this event you should check underneath the van to ensure that the water supply line is clear of kinks or any damage. Inside the hand pump there are buckets and seals as well as valves. Each of these materials are of the plastic type and can be replaced quite simply by disconnecting the top of the pump and inserting new components. These components are usually purchased from an RV supply company as a kit and it is advisable to replace each of those components when servicing your hand pump.

HATCH

Ensure that your hatch is completely closed at all times prior to travelling as this could not only let in excess dust and water but could also cause damage to the hatch due to excessive vibration when the hatch is open.

HOSE

In the case of waste water hoses, ensure that they are disconnected prior to moving off with your RV. The same advice applies to high pressure water hoses that are connected to the outside of the RV.

HOT WATER SYSTEMS

Hot water systems can be electric or LP gas and it is advisable to refer to the handbook of that appliance for all servicing details.

The following information has been supplied by Coast to Coast RV Services - 32 Station Street, Dundas NSW 2117 Ph (02) 9684 1434

HOT WATER SYSTEMS (SUBURBAN LPG HOT WATER SYSTEM)

Trouble Shooting Guide

This can be used as a guide that will enable you to solve most of the problems that the customer could have with the heater.

SOOTING	WILL NOT COME ON	PILOT WILL NOT STAY ON	NOT ENOUGH HOT WATER	WATER TOO HOT	POSSIBLE CAUSE
	●				Possible malfunction of the bottled gas regulator
	●	●			Lint in pilot air opening
		●			Loose or inoperative thermocouple
	●	●			Clogged pilot orifice
		●			Improper pilot flame
			●		Thermostat setting too low
			●		Main burner orifice too small or clogged
				●	Thermostat setting too high
				●	Pilot flame adjustment too high
●					Thermostat not shutting off completely
●					Yellow pilot due to improper setting
●					Yellow flame due to improper air shutter adjustment
●					Lint or dirt in pilot or pilot orifice
●					Lint or dirt in burner tube
●					Leaves or other obstructions in flue box

IF AFTER CHECKING THE CHART THE UNIT WILL STILL NOT PERFORM - TURN THE APPLIANCE OFF AND CONTACT THE DEALER.

Safety

The water heater thermostat is constructed with a built-in safety shut-off device. The gas supply to the main burner and pilot burner will be cut-off in the event that the pilot flame is extinguished for any reason. The thermostat is also equipped with a high temperature limit energy cut-off switch (ECO). The energy cut-off switch will shut off all gas supplied to the burner and pilot burner in the event of the water temperature exceeding 82 degrees Celsius. The energy cut-off switch is a single fuse switch and is not field replaceable. Should the ECO function be used the thermostat must be replaced before the water heater can be placed in operation again.

Contact your dealer for service. All service work must be done by a qualified service agent.



Always switch off gas pilot flame of your hot water system and refrigerator before entering a service station or refuelling your car.

INTERIOR LIGHTS

In the case of pop-top or campervans, if the vehicle is connected to 240 V the roof should be in the up position. If any lights were left switched “on” they could cause the vinyl or canvas to burn. It is also essential to switch off 12 V interior lights before lowering the roof. If the 12 V lights were left switched on they also could burn the vinyl or canvas after the 12V lead was connected to your car.

INTERIOR PLYWOOD

Care should be taken when cleaning internal plywood lining. Excessive moisture and vigorous rubbing can easily rub through the plywood’s decorative paper lining. A soft damp cloth gently wiped over surfaces should be all that is required.

JOCKEY WHEEL

In the case of pneumatic tyres on jockey wheels, these should be pumped up to a pressure which maintains the tyre in a condition that avoids a flat surface on the bottom of the tyre. If left underinflated long term damage to the tyre could result. The pressure depends upon the weight carried on the drawbar. It is advisable to keep that tyre pumped to a pressure which avoids the bulging of the tyre on the bottom. It is possible to grease the internal thread of the jockey wheel. This can be done by removing the jockey wheel from its clamp and unwinding the jockey wheel so that the top section of the jockey wheel comes away from the bottom tubular section and you can then grease the internal thread of the jockey wheel.



Always ensure that the hand brake is released and jockey wheel is stored before moving off.



Familiarise yourself with the location and the instructions for use on your fire extinguisher.

LEVELLING DEVICES

Levelling devices or level rides can be fitted to most Recreational Vehicle/Car combinations. It is advisable that you seek professional advice from your RV dealer as to the type of levelling device you should use depending upon the type of car and the type of vehicle being towed.



During heavy rain or when you leave your Recreational Vehicle unattended you should always lower your awning or annex to avoid water ponding on the awning top.

Water ponding can cause damage to an awning or annex due to the weight of the water trapped on the roof.

MATTRESSES

Mattresses should only be cleaned with warm soapy water to remove any stains and in the case of foam mattresses, a considerable amount of time needs to be allowed for the drying of the foam in the sun prior to storing away in the RV if they have been wet or after cleaning. The foam inside the mattress can deteriorate if it is stored away wet and it can also cause a damp smell to continually come from the mattress.

MICROWAVES

In the case of microwaves, they should be firmly strapped into position before moving your RV and you should refer to the owners guarantee and maintenance card as supplied with your microwave oven.

MIRRORS

It is compulsory in most states of Australia to fit rear vision mirrors whilst towing a trailer or Recreational Vehicle. These mirrors should allow you to see down the side of your trailer or Recreational Vehicle. When purchasing mirrors it is important to select a type that allows minimum vibration to the mirror whilst travelling. If fitting the type that attach to your car's external rear vision mirror ensure that you can adjust your car mirror whilst the trailer mirror is fitted.



Always ensure the electrical lead is unplugged prior to moving off.

PAYLOAD

UNDER NO CIRCUMSTANCES SHOULD YOU EXCEED THE MAXIMUM ALLOWABLE PAYLOAD FOR YOUR RECREATIONAL VEHICLE. Standard payload for single axle RV's is 300 kg and for tandem RV's 400 kg.

These payload figures include the weight of water and gas i.e. a single water tank 59 kg and gas either 4.5 or 9 kg per cylinder. The total amount of weight carried in the water and gas must be deducted from the 300 or 400 kg payload capacity. The balance is the amount of allowable weight

that you can put into the RV without exceeding the manufacturers recommended specification unless your RV has been especially built to carry a larger payload (consult your dealer).

UNDER NO CIRCUMSTANCE SHOULD YOU CARRY MORE THAN THE TOTAL ALLOWABLE PAYLOAD AS MENTIONED ABOVE, OTHERWISE YOUR WARRANTY WILL BE VOID. Apart from the warranty you could cause a serious accident by overloading tyres, springs, axles or brakes. It is strongly recommended that if an owner cannot determine the weight of his personal payload the vehicle should be weighed with all personal items included together with the tank full of water and the gas cylinders full of gas.

PLASTIC POLE CARRIERS

Tubular pole carriers are only intended to carry the weight of annex poles. Do not overload pole carriers. They are usually attached to the front drawbar or rear bumper bar. Every 500 klms you should check the fixing bolts or screws as a great deal of vibration can be transmitted to these pole carriers. Before travelling you should ensure that the screw-on cap is tightened and where a locking pin is fitted, this pin must be in place.

POPTOPS

When raising the roof of a poptop or campervan it is advisable to leave the main door open. If the main door is closed during this raising operation it can cause a vacuum inside the RV and make the roof a little difficult to raise. Leaving the door open will allow air to come into the campervan or poptop whilst the roof is being raised and therefore make the raising operation much easier.

12 VOLT PRESSURE PUMP

Your pressurised 12 V Water System should give years of trouble free service. The modern pumps are both quiet and reliable. Pumps should be isolated from power whilst travelling. Your hand pump is also maintenance free. Replacement parts are readily available for worn washers and seals. Check these items prior to each trip to make sure they are in good working order.

RANGEHOOD

Refer to the manufacturers warranty and maintenance details as supplied with your RV.

REFRIGERATORS

Gas/electric refrigerators need at least 24 hours continuous running before they will attain their maximum operating temperatures. It is essential that you always have your refrigerator level when operating from either gas, 240 V or 12 V. Whilst the vehicle is travelling and is slightly out of level this will affect the amount of refrigeration produced but the affect should be minimal. When you are parked beside the road or in a camping spot it is essential that your vehicle be level while it is operating. If you cannot level your vehicle then you should switch the refrigerator off as continual operation of the refrigerator in an out of level condition can damage some parts of the refrigerator. You should refer to the warranty and instruction manual as supplied with your vehicle for further information on refrigerators.

When your RV is stored for any period of time your refrigerator should be completely dry inside and the door should be left slightly open to allow air circulation in the refrigerator otherwise mould could build up on the inside surfaces of the refrigerator. It is important that the ventilation fitted to your RV refrigerator must at all times be clear of any blockage and these vents must not be taped over or blocked for any reason. In the case of camper trailers and poptops, the refrigerator should not be operated whilst the vehicle is stored with the top closed. It is allowable to operate the refrigerator whilst travelling when the top is closed as air pressure will allow circulation of air inside the vehicle. However, when the vehicle is stored with the top down it may be possible for a build up of heat inside the vehicle which is undesirable.

The refrigerator must be operated in a reasonably level position. The cooling process of your refrigerator is dependant upon the refrigerator being level in both directions. It is important that when stationary the vehicle should be levelled as close as possible to level in both directions. If the vehicle is not level in both directions the performance of the refrigerator will be seriously impeded or it may not operate at all.

The refrigerator in your Recreational Vehicle is usually designed to operate from LP Gas, 12 V or 240 V. In the case of these absorption

refrigerators it is extremely important to ensure that all ventilation to the refrigerator is maintained in a clear and unblocked condition. Overheating of the refrigerator components can lead to poor refrigeration in the cabinet.

When operating your refrigerator on 12 V ensure that a 6mm wire is connected from the plug on the back of your car to the battery of your towing vehicle. **ANYTHING LESS THAN A 6MM** may cause a build up of heat in the wire and a loss of refrigeration in your RV.

The vehicle must be level in both directions (length & width) for your RV refrigerator to operate efficiently. If parking your vehicle for more than 15 minutes ensure that the vehicle is level. If it is not level then switch off the gas or 12 V supply as the refrigeration system will not operate. Never allow the refrigerator to operate from 12 volt for more than 30 minutes with the engine of your car switched off otherwise you could flatten the battery of your car.

Heat Pump or Compressor Refrigerators

These refrigerators draw less 12 V current than absorption refrigerators and therefore they can be left switched on for longer periods of time. However with most 12 V refrigerators the running time on a fully charged battery varies depending upon the temperature of the day and a 12 V battery can last between 24 and 48 hours before it needs recharging. Compressor refrigerators will operate up to 30 degrees out of level.



Switch off gas flame in your refrigerator and hot water system before entering a service station or refuelling your car.

The following information has been supplied by Electrolux Finch who have service agents throughout Australia Ph (03) 9545 5655.

Refrigerator Fault Finding Electrolux

Owner's Observation

Cause/Remedy

No sound from refrigerator

- As there are no moving parts in 3 way absorption type refrigerators/freezers, no sound will be detected during operation.

-
- Refrigerator fails to operate on 240 volts
- Controls set incorrectly. Check that thermostat is set to maximum, power is switched on and controls are set to obtain 240 volt operation.
 - Break in electrical circuit. Check fuses, switches and plugs.
 - Drop in supply voltage. Check that the supply voltage to the refrigerator/freezer is maintained at full rate.
- Refrigerator fails to operate on 12 volts
- Controls set incorrectly. Check that the 12 volt switch is on, and that the controls are set correctly to obtain 12 volt operation.
 - Break in electrical circuit. Check fuses, switches and plugs.
 - Drop in supply voltage. Check that the 12 volt supply to the refrigerator/freezer is maintained at the required full rate.
- Refrigerator fails to operate LP Gas
- Controls set incorrectly. Check that the thermostat is set to maximum, gas is turned on and controls are set to obtain gas operation.
 - Gas supply restricted. Check that the gas cylinder is full, all LP gas valves are open, ensure gas jet is clean and burner is alight.
 - Incorrect lighting procedure. Check that flame failure safety valve has not been prematurely released.
- Refrigerator not getting cold enough.
- Refrigerator/freezer not level. The refrigerator/freezer must be level in both directions to operate correctly.
 - Ventilation/installation inadequate. The refrigerator /freezer must be ventilated, installed and flued in accordance with manufacturers instructions.
 - Drop in supply voltage. Check that the

supply voltage to the refrigerator/freezer is maintained at full rate.

- Controls not set correctly or thermostat incorrectly used. In hot weather the thermostat setting should be closer to maximum than usual.
- More than one source of energy used at the same time.
- Door is not closed properly or magnetic sealing strip is defective.
- Gas system restricted or flame has gone out. Depending on use, gas system should be periodically cleaned and adjusted.
- Evaporator heavily coated with ice. Refrigerator/freezer should be defrosted at more frequent intervals.
- The gas pressure is incorrect. Check the pressure at both the gas cylinder and burner.

For further information please refer to your operating instruction manual.

REGULATOR

A regulator is fitted to the gas cylinder when the Recreational Vehicle is built. It will not be necessary to adjust the pressure of that regulator at any future time. Should you feel the regulator needs adjusting it must be carried out by an authorised gas installer who has the necessary equipment to readjust the regulator. Never try to adjust the regulator at home.

ROLLOUT AWNINGS

It is advisable, that when rollout awnings are stored in the sun in a rolled up position for a considerable period of time the vinyl on the awning should be covered against deterioration from ultraviolet rays, as prolonged exposure to weather will cause the exposed section of vinyl to lose its colour or deteriorate. It is advisable that a cover be placed over the roller of the rollout awning to avoid this deterioration taking place.

It is similarly advisable to cover the tyres on the vehicle and the gas cylinders if they are mounted on the drawbar as they also can deteriorate if left for long periods of time in strong sunlight.



Tyre pressure should be increased in your tow vehicle to compensate for the extra load of your RV. Consult vehicle specifications in your car handbook.

SPEED LIMITS

State caravan towing speed limits as at April 1999 are as follows:

Northern Territory; Queensland; NSW; Victoria; South Australia	As sign posted
Western Australia	up to 750 kg - 100 km/h over 750 kg - 90 km/h
Tasmania	90 km/h

These speed limits can change from time to time and it is advisable to check with your local motoring authority before commencing your journey.

The major concern is not how fast you can travel with your RV but how safe can you travel. Irrespective of road speed signs, you should travel only as fast as the road conditions, wind speed & direction, rain, type of tow vehicle etc., permit. **NEVER** travel in excess of the towing speed regulations for each state of Australia.

STOVES

Stoves should be operated in accordance with the stove manufacturers printed instructions as supplied to you when the RV is originally delivered. Please contact the dealer or manufacturer of the RV should those instructions not be supplied at the time of delivery. Ensure that when RV's are stored that all appliances are turned off and cylinder valves closed.



Recreational Vehicle tyre pressure should be kept at pressure stamped on VIN (Vehicle Identification) plate.



Warranty Period.

During the warranty period remember it is the owners duty of care to carry out regular maintenance i.e. tyre pressure, wheel bearing greasing and adjustment, greasing of corner stabilisers, adjustment of brakes and hand brake cable.

These items are NOT covered by warranty and the cost of all general maintenance items is the owners responsibility.

TOWING EQUIPMENT

It is advisable to take advice from your RV dealer as to the type of towing equipment and towbar that should be fitted to your car. It is essential that the towbar have a rating plate at least equal to the aggregate trailer mass of the vehicle being towed. Weight distribution hitches in many cases are a distinct advantage and these should be used in accordance with the recommendations of your RV dealer.

TYRES

Checking tyre pressures - this should be done at least every 500 km and they should be inflated to the manufacturer's recommended tyre pressure as stamped on the Vehicle Identification Plate which can be located on the drawbar, in the front boot or inside of your RV.

Ensure that the correct pressure is maintained in the tyres at all times. Underinflated tyres can lead to the tyre walls becoming overheated and therefore tend to blow out. Overinflated tyres can cause severe vibration and stresses to your RV and therefore this condition should also be avoided. If in doubt about the pressure of the tyres on your RV you should consult a recognised tyre refitting company that can recommend a tyre pressure to you. Tyre pressure is essential for well maintained tyres. In the case of the tyres on your towing vehicle, the tyre pressure should be increased when towing the RV.

As a general guide the front tyres of your car should be increased by 10% over the recommended pressure and the rear tyres of your car should be increased by 20% over the recommended manufacturers specifications. Check your car manufacturers recommendations in your car handbook.

WARRANTY PROCEDURES

It is essential that before undertaking any repairs or alterations to your RV that you consult with the manufacturer or dealer prior to carrying out these repairs. It is essential to return the warranty card as supplied with your RV originally so that your warranty will be registered with the manufacturer. Further procedures on warranty should be in accordance with the detailed warranty card as supplied with your RV. It is essential to understand the difference between warranty and service & maintenance. All RV's need to be maintained and serviced and this cost must be borne by the owner as it is part of your cost of travel. Warranty procedures are those items which are stated in the warranty card and you should carefully consider whether an item is a service and maintenance item prior to contacting the manufacturer to make a warranty claim.

WATER SYSTEMS

The water system on your RV is designed to be operated by a hand pump or 12 V pump at the sink or a mains pressure connection to a tap at the sink.

It is important that the tank of your RV be drained when the RV is stored for any long period of time and the system is flushed out with clean fresh water approximately once per year.

At times the hose connecting the tank to the pump can become damaged or kinked and under these circumstances it will be difficult to operate the pump. In these instances check that no kinks have occurred and free the line from the tank to the pump. Additionally, if the vent pipe to the tank becomes blocked or damaged or kinked it can slow down the process of withdrawing water from the tank via the pump. In these cases again check to ensure that the vent pipe connected to the top of your tank is clear of all obstructions.



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WINDOWS & WATER TANKS

You should refer to the main body of the owners manual for the servicing of items such as windows and doors.

The following information has been supplied by CAMEC PTY LTD who have offices in the following states

<i>Victoria</i>	<i>Melbourne</i>	<i>Telephone: (03) 9562 9888</i> <i>Facsimile: (03) 9562 9092</i>
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<i>New South Wales</i>	<i>Sydney</i>	<i>Telephone: (02) 9949 5788</i> <i>Facsimile: (02) 9949 4020</i>
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<i>Queensland</i>	<i>Brisbane</i>	<i>Telephone: (07) 3273 7666</i> <i>Facsimile: (07) 3273 0492</i>
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Australite Windout Window

Being a low maintenance product, very little service is required. A full range of spare parts are readily available from most RV part retailers.

Cleaning: Warm soapy water and a soft cloth should be used for cleaning your Australite Window.

Note: Never use solvents on any of the acrylic based glazing options (Galaxy and Bubble range etc.).

Insect screens are removable from the outside and are best soaked in warm soapy water for cleaning purposes.

Series 300 and series 44 Sliding Windows - should be treated the same as Australite Windows but the slide tracks and drain slots should be regularly cleaned. An occasional application of sprayable silicone will ensure your windows continue to slide effortlessly in their tracks.

Australite Four Seasons Hatch

The Four Seasons Hatch is another low maintenance product. All flaps should be closed to the "Lock" position when travelling. Screens are easily removed for cleaning. Soak in warm soapy water. Your Australite Four Seasons Hatch features 161 square centimetres of fixed ventilation,

even when closed. Every twelve months check for sealing where hatch is fixed to roof.

Australite Protector Shade

Protector Shades feature a specially designed stay, with in-built limit stops. The stay adjustment nuts should be kept lubricated to prevent seizure, especially in coastal areas.

Australite Panorama, Trimatic and Camper Doors

Australite doors are virtually maintenance free if kept in good, clean order. An eye should be kept on locks and striker plates to ensure that they are kept in adjustment.

Note: The Sliding Tracks for Panorama Door sliding window should be kept clean.. Acrylic window panels in Trimatic and Camper Doors should be cleaned with warm soapy water. Never use solvents on these parts.

Water Tanks

Your Camec Water Tank is manufactured from high quality non-toxic, non-tasting polyethylene featuring screw in barbs and breathers for easy replacement and or drainage. When your van is not in use for extended periods, it is recommended that your water tank and lines are completely drained until ready for use again.

240 Volt Power

Please note that all RV's are fitted with a 15 AMP 240 V power inlet. A suitable 15 AMP extension lead is required as a normal 10 AMP domestic lead will not fit this inlet. Do not attempt to modify the normal domestic plugs or sockets, for this purpose.

12 Volt Travelling Lights

It is advisable to check all travelling lights several days prior to departing on your trip. All lights should be checked for operation. Check to ensure that all Festoon Bulb Contacts are tight and clean and all Bayonet Contacts are clean. If this routine becomes habit prior to each journey, much frustration and lost time can be prevented at departure time.

WHEEL NUTS

After approx 100 km of travelling the owner should check all wheel nuts on the vehicle and these should be tightened to a tension of 125 Nm. or 90 ft lb (for 7/16" wheel studs). After each 100 km for the first 400 km, the wheel nuts should be again checked to the same Nm. The wheel nuts should then be checked every 1000 km or 6 months for the life of the RV.



Familiarise yourself with the location and the instructions for use on your fire extinguisher.

PRE TRIP CHECK LIST

PRIOR TO DEPARTING ON YOUR RV TRIP

- Check that the wheel nuts on all wheels have been tightened to the manufacturer's specification for wheel nuts. These should be tightened with a torque wrench to 90 ft lb or 125 Nm and they should be tightened after each 100 km for the first 400 km and they should be checked every 1000 km or six months.
- Ensure that the water tank has been filled and that the locking cap is secured.
- Check that all traffic lights on the vehicle are operating correctly from the car.
- Ensure that the refrigerator door lock is secured in place.
- Ensure that the gas cylinders are secured.
- Ensure that the rear vision mirrors on your car are correctly adjusted.
- Check that electric brakes on your RV are working.
- The jockey wheel should be removed from its clamp and stored in the boot of car or the boot of the RV or locked in the travelling position if of a swivel mount type.
- Unless the gas refrigerator is being operated whilst travelling ensure the gas cylinders are turned off.
- Ensure that front and rear corner stabilisers are in the up position.
- Ensure that the handbrake on the RV has been correctly released.
- Ensure that the 240 V electrical lead is disconnected from the RV.

- Ensure that the safety chains are correctly connected between the RV and the car.
- The 12 V power lead for the RV lights should be correctly connected and the towing aids or level rides should be correctly connected and adjusted.
- Ensure that the roll out awning is stored away and locked in the travel position.
- TV antenna should be securely stored.

CARE AND MAINTENANCE

All corner stabilisers should be oiled or greased regularly to ensure they operate smoothly. Handbrake adjustment should be maintained via the turnbuckle between the handbrake lever and the cable. This cable should not be over tightened as it may cause brakes to overheat and in turn this could cause bearing failure.

With your RV fully loaded the hand brake ratchet lever should engage the 5th or 6th notch from the tow ball end of the coupling. If the ratchet lever engages any notch closer to the towball end of the coupling than 5 or 6 then the brake cable is “too tight”. If the cable tension is “too tight” it may apply the RV brakes when the suspension compresses. This applies to independent suspensions and beam axles with leaf springs. This “too tight” or incorrect adjustment could cause overheating of brake shoes and damage to your brakes and bearings. Brake cable adjustment should be carried out via the turnbuckle and ensure that the lock nut is tightened after adjusting the turnbuckle.

When the RV is not in use it should be stored preferably undercover but if not undercover then a suitable amount of air should be allowed to circulate inside the RV to avoid dampness and mildew from starting inside the vehicle. The refrigerator door should be left ajar so that air can circulate in the refrigerator. The gas cylinders should be turned off. The electrical lead should be disconnected. In the case of the vinyl on pop tops or the canvas on campervans and tent trailers these should be occasionally aired to maintain these items in perfect condition.

In the case of campervans and tent trailers where they are packed up in a wet condition they should be thoroughly dried out at home before storing them away permanently. Where an RV is left for a long period of time it should be jacked up so that the weight is not permanently on the tyres. Tyres can maintain a flat spot if they are left with the full weight of the RV and particularly if the tyres lose some air this would tend to make the tyres unbalanced and unsatisfactory for future use.

ENSURE ALL INTERIOR LIGHTS ARE SWITCHED “OFF” WHEN THE ROOF IS CLOSED.

LOADING YOUR RECREATIONAL VEHICLE

It is advisable to load the RV as equally as possible front and back and side to side. It is not advisable to carry exceptionally heavy loads such as annexes in the front locker of your RV as this may upset the design balance of your vehicle. These items should be carried in the boot of your car. Heavier items should be carried towards the centre of the vehicle. Never carry heavy items at the rear of the vehicle.

HITCHING AND UNHITCHING

It is essential that when carrying out the hitching and unhitching operations you should do so without interruption as this can lead to some essential items being missed, such as the handbrake being left on or safety chains not being correctly attached. When carrying out this operation you should run through a check list similar to the following.

1. Ensure that the coupling is correctly seated over the top of the ball and the handle above the coupling is down in the correct position.
2. The 12 V electrical plug is connected between the RV and the car securely and safely.
3. Ensure safety chains are attached to the vehicle in such a manner to allow normal lateral movement between the RV and the car.
4. Load levelling devices or level rides should be correctly and completely attached.
5. The jockey wheel must be removed from the clamp.
6. Release the handbrake.

After this hitching operation has taken place it is essential to walk around the vehicle to ensure that the electrical lead has been disconnected, that the water supply hose and drainage hose have been disconnected and that the door is closed.

That all windows and hatches are in the lock position. That the step from outside the door is either retracted or is stored in the front boot. That all lights are operating correctly, such as blinker lights, stop lights, tail lights etc.

The awning on the side of your RV is completely retracted and locked.

The rear and front corner stabilisers are completely retracted and that any chocks are removed from the wheels.

Double check the inside of the vehicle to ensure that the refrigerator door is locked ready for travel. That all cupboard doors are closed securely. That any loose items inside the vehicle and cupboards are properly stored so that they cannot roll around or do damage whilst travelling. Items such as television sets, microwaves, VCR's should be securely fastened in place and that exterior television antennas have been removed prior to travel.

Ensure to turn off all internal light switches 12 V and 240 V prior to travelling as reconnecting of the 240 V or 12 V lead may bring lights on and this could particularly damage the vinyl on a pop-top.

When about to travel on the highway you should first test that the brakes, particularly electric brakes, on your RV are operating. This can be done by actuating the manual switch on the brake controller located inside your car to ensure that the RV brakes will operate independently and that when you travel the normal RV braking operation will be automatically supplied from the brake controller of your car.

Before carrying out any alterations or repairs to your RV it is advisable to firstly contact the dealer or the manufacturer to ensure that any work that you carry out does not void the warranty on your RV.

It is recommended that an electrical lead with a safety switch fitted into the lead be used at all times. - Some caravan parks do not have safety switches fitted at the caravan park site pole. Circuit Breakers are not safety switches. Safety switches have a test button fitted. If your RV does not

have a safety switch fitted on the inside of the van near the power inlet it is strongly recommended that such a safety switch be fitted by a licensed electrical contractor.



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The electrical safety information and cartoons used throughout this handbook were developed by the Queensland Electrical Education Council for the Electrical Safety Office, Dept. of Mines and Energy in cooperation with the Caravan Trades & Industry Association of Queensland and the Caravan Parks Association of Queensland.

The R.V.M.A.A. acknowledges the excellent contribution which the above organisations have made to this Owner's Handbook.

TRIP NOTES

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