



# OWNERS MANUAL

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# Getting Started

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- \* Ensure gas bottle is off, filled and secured.
- \* Check that the water tank and diesel tank are full.
- \* Ensure all internal loose articles are stowed away securely.
- \* Close and lock all windows, lockers and cupboards.
- \* Close and secure all internal doors and refrigerator door.
- \* Make sure that any containers in the refrigerator, which contain liquid are properly sealed.
- \* Ensure that the awning is up and locked in the travel position.
- \* Check that any external 240V electrical lead is disconnected from the Caravan and the inlet cover is closed.
- \* Check tyre conditions.
- \* Check tyre pressure.
- \* Check wheel nuts.
- \* Check all lights on the Tow Vehicle are operating before connecting Caravan.
- \* Fully raise the corner stabiliser legs.
- \* Hitch the Caravan to the Tow Vehicle, check that the safety catch is operating.
- \* Connect the break-away chain.
- \* Release the Caravans handbrake and remove chocks from wheels.
- \* Remove the jockey wheel from its clamp and store in the Caravan or locked in the travelling position (only applicable to swivel mount jockey wheels).
- \* Connect the 12V electric plug to the Tow Vehicle and check that all external lights on the Caravan are working.
- \* Check all controls on the electric brakes and check for any humming in the drums.
- \* Fit and adjust towing mirrors (if applicable).
- \* Raise any steps on the Caravan.
- \* Walk around the Caravan and check for any loose items or missed things (eg, stabiliser leg, buckets, generator door open/ not locked, mats, external leads etc).
- \* Double check internally of any loose items or concerns.
- \* Lock and secure the external doors of the Caravan.

## NB:

Do regular checks of the suspension, chassis components and interior fittings.

# Legal Requirements

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To ensure the safety of yourself and other road users, you must abide by the laws governing the towing of Caravans. These are:

- \* The Tow Vehicle and Caravan must comply with all relevant standards for registration.
- \* The Tow Vehicle and Caravan must be in a roadworthy and safe condition.
- \* All Caravans must be fitted with a rear number plate and a registration label fixed to the left side or rear of the body, with the label facing outwards.
- \* Towbars and couplings must not obscure the towing Tow Vehicle's number plate or rear lights when the Caravan is not connected.
- \* Towing more than one Caravan is prohibited.
- \* People are not permitted to ride in the Caravans, while in transit.
- \* The speed limit for the Tow Vehicle towing a Caravan is the same as for a normal Tow Vehicle.

# Driving and Towing Hints

## ***Avoiding Collisions with Animals***

- \* Avoid driving at dawn, dusk and a few hours after dark in areas populated by wildlife as this is when animals are more likely to be moving around and feeding.
- \* Keep alert in areas likely to be populated by wildlife. Be cautious, scanning both the road ahead and the roadsides. Get any passengers to help and pay attention to any warning signs (eg Kangaroos next 10km). Be aware of traffic behind you, as well as oncoming traffic.
- \* Driving slower when visibility is poor or where you expect there are animals gives you a greater reaction time and a better chance of avoiding a collision with an animal.
- \* Throwing food scraps out of your car is illegal and it may also attract wildlife to feed on the sides of roads, increasing the risk of injury.
- \* Some animals may act unpredictably, so where possible, give them plenty of time and room to move off the road when passing them. Brake safely and, if necessary, sound your horn in a series of short bursts, then drive slowly past the animal.
- \* Always maintain full control of your Tow Vehicle. Sometimes, it may be impossible to avoid a collision with an animal if avoiding it puts yourself and other motorists in danger.

## ***Driving at Night***

- \* Use your high beam lights when driving in rural areas and on open highways away from urban and metropolitan areas.
- \* If you are driving with your high beam lights, you must dim them before coming within 200m of any oncoming vehicle so the oncoming vehicle is not blinded by the glare.
- \* If you are within 200m and following another vehicle, you must use your low beam lights, with your fog lights off.
- \* Never look directly into an approaching car's high beam headlights. As the car draws near, watch the left edge of your lane, noting the position of the oncoming car out of the corner of your eye.
- \* When driving through fog at night it is best to use your low beam lights (and fog lights, if applicable). If you use your high beam lights in fog, it is like shining your lights on a mirror.
- \* Be alert to vehicles, particularly darker vehicles, travelling after sunset without their headlights on.
- \* Don't try to "get back" at another driver by keeping your high beam lights on if they haven't turned theirs to low beam. If you do, both of you may be blinded.
- \* Fog lights should NOT be used unless driving in fog or other hazardous weather conditions causing reduced visibility.

## ***Driving in Wet Conditions***

When it is raining, or the road is wet, most tyres have good traction up to about 60kph, however as you move faster your tyres will start to ride up on the water. This is called "aquaplaning." In heavy rain your tyres can lose all traction with the road at around 80kph. Bald or badly worn tyres will lose traction at a much lower speed. The best way to keep from aquaplaning is to drive slower in the rain or when there is wet road.

If it feels like your tyres have lost traction with the surface of the road;

- \* Ease your foot off the accelerator pedal.
- \* Keep the steering wheel straight. Only try to turn if it is an emergency. If you must, turn slowly or you will cause your vehicle to skid.
- \* Do not try to stop or turn, until your tyres are gripping the road again.

Less than one inch of water can cause a driver to lose control of a car and most vehicles can float in two feet of water or less.

If you encounter a flooded road, don't attempt to drive through it. Turn around and seek an alternative route or wait until the water subsides. Although it may look like just a few inches of water on the road, you have no idea if the road has washed away underneath providing a hazardous situation. It is also difficult to determine the depth of floodwaters.

If your vehicle stalls in rising flood water and you can safely do so, abandon it immediately and seek higher ground. Rapid rising water may engulf the vehicle and its occupants and sweep them away. Deaths often occur because people mistakenly believe that vehicles provide protection. If you find yourself in this situation you must make a judgement call about whether you can make it to higher ground or if you would be better off remaining with your vehicle. The only sure safety rule is to turn around and avoid flooded roadways in the first place.

### **Tips**

- \* Be especially cautious at night when it is harder to recognize flood dangers.
- \* Avoid already flooded areas and areas subject to sudden flooding. Do not attempt to cross flowing streams or water flowing over the roadway.
- \* If you are driving and come upon rapidly rising waters, turn around and find another route.
- \* Move to higher ground away from streams, creeks and flood control channels.
- \* If your route is blocked by barricades, find another route. Local Officials put up barricades to protect people from unsafe roads. Never drive around barricades, as it can be a serious risk.

## ***Effects on the Tow Vehicle***

When towing the Caravan, your handling of and the Tow Vehicle will be effected by:

- \* decreased acceleration and braking performance.
- \* reduced Tow Vehicle control and manoeuvrability.
- \* Increased fuel consumption.

By understanding the Tow Vehicle's limitations and changes, you can help prevent crashes and structural damage to both the Caravan and the Tow Vehicle.

It is advised that during a long road trip, that you stop regularly and check that the:

- \* Couplings and safety chains are still fastened.
- \* Brakes and wheel-bearings are not overheating.
- \* Light connections are secure and lights are still working.
- \* Tyres are still inflated correctly and not rubbing on the mudguards, suspension, trailer body and so on.
- \* Loads, doors, hatches, covers, etc are still properly secured.

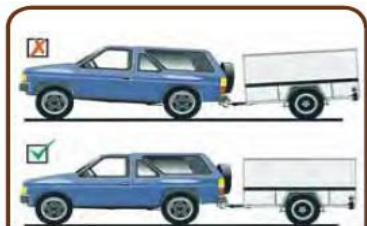
## ***Fuel Consumption***

Fuel consumption increases for most light vehicles when towing a Caravan, particularly at speeds above 90km/h. If the Caravan and towing vehicle are compatible, other attributes of fuel consumption may include; poor engine tune, fast speeds, bad driving habits and excessive breaking.

If using a diesel-powered vehicle to tow, then keep note of where the exhaust pipe is, in conjunction to the gas being emitted and possible affect to the Caravan. If there is a lot of black gas being emitted, then there might be a problem in the Tow Vehicles engine.

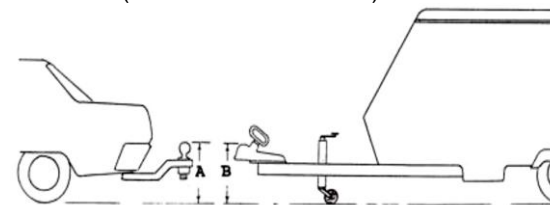
## ***Load Distribution***

The first step is to ensure that the Tow Vehicle, trailer and load are suited. To avoid unsafe towing or swaying, it is essential that the Caravan is never over-loaded, or the weight of the Caravan is solely at one end.



The best ball loading is around 10% of the Caravans mass; with the heavier items secured and positioned close to the axles as possible.

Both the Caravan and Tow Vehicle should remain level. Prior to departing, ensure that the ball height is measured. This can be done by measuring from the ground to the centre of the coupling ("B" in below illustration); then measuring from the ground to the height of the tow ball of the towing Tow Vehicle ("A" in below illustration).



The two measurements should be the same, with a 20mm allowance (plus or minus). If this is not the case then the ball mount may need to be adjusted.

## ***Reversing***

The best way to reverse your Caravan is to turn the steering wheel in the opposite direction of where you want the Caravan to be placed. Such as if you want the Caravan to go to the right you would turn the steering wheel anti-clockwise. If you want the Caravan to go to the left then you would turn the steering wheel clockwise. Begin straightening the steering wheel just before the Caravan reaches its required position.

If you are running into difficulties or over-steer the Caravan, then the best method is to start all over again in the straight-on position.

If you are not confident then try practise reversing the Caravan in an open empty car park, before heading off onto your trip.

## ***Safety During an Emergency Stop***

It is advised to carry a warning device, (eg; reflective triangle), which is to be displayed when necessary.

### **Stopping Procedure**

- \* If you need to stop, then pull over off the road as much as you can.
- \* Display your warning device and put the Tow Vehicle hazard blinker lights on.
- \* Ensure that all passengers leave the Tow Vehicle and are well away from both the Caravan and Tow Vehicle.
- \* When changing the tyre or assisting to the problem, then do so with great care and take into consideration passing Tow Vehicles and their speed that they may be doing.

**NB:**

**Be extra careful at night time, as passing drivers may have poor visibility.**

## Signage

### "DO NOT OVERTAKE TURNING TOW VEHICLE" Signs

If the Tow Vehicle or combination is 7.5m long or longer, you may display the sign **"DO NOT OVERTAKE TURNING TOW VEHICLE"** at the rear. This either, can be a separate sign or incorporated on one of the rear marker plates.

If this sign is attached to the rear, other vehicles must give way whilst the Tow Vehicle or combination uses part or all of an adjacent second lane for turning. The Tow Vehicle or combination has the right of way to complete such turns.

It is an offence to straddle lanes when turning if this sign is not displayed.

It is an offence to display this sign on a Tow Vehicle or combination less than 7.5m long. However, it is not illegal to use standard rear marker plates without the words **'DO NOT OVERTAKE A TURNING TOW VEHICLE'** on such a Tow Vehicle.

### "TOW VEHICLE UNDER TOW" Signs

It is not required to display any sign indicating a Tow Vehicle is undertow. However, drivers may do so if they wish.

## Spare Items

It might be handy to keep the following items as spares in the Caravan:

- \* Fan belt and radiator hoses;
- \* Engine oil;
- \* Coolant;
- \* Insulating tape;
- \* Tow rope;
- \* Light bulbs for all lights;
- \* Extra containers of water;
- \* Cable ties;
- \* First aid kit;
- \* Local maps;
- \* Jumper leads;
- \* Fuel reserves;
- \* Batteries (various sizes, AA, AAA, D etc); and
- \* Torches

## What's a Safe Driver

Not only is the safety requirements of the Caravan important, but so too is the driver. Experience with towing is not essential however a driver who is inexperienced with towing a Caravan needs to make sure that they understand the general principles and effects of towing, before they should risk driving tow in high traffic volume or at highway speeds.

When towing, drivers should:

- \* Keep to the left and allow others to pass, where suitable.
- \* Allow more time and distance when overtaking, due to the low levels of performance on the Tow Vehicle. Remember not to "cut in" front of the overtaken vehicle.
- \* Avoid pot holes and rough edges.
- \* Remember the extra length and width of the Caravan when entering traffic and allow for the "cut in" on corners and curves.
- \* Sudden and violent swerving is dangerous, smoothly apply the accelerator and brakes, to better steer (especially in the wet or slippery conditions).
- \* Leave a longer stopping distance for heavier Caravans and in poor driving conditions.
- \* When driving downhill engage in a lower gear, along with the brakes. This will reduce the full strain on brakes.
- \* If driving in a manual transmission vehicle, then always start in first gear and gently change up to the next gear. Don't ride the clutch or be in a hurry to change gears, allow the revs to build up.
- \* If in an automatic transmission vehicle, try not to use the overdrive gear.
- \* Excessive speed when towing can be hazardous: the speed limit varies from state to state.
- \* If you are feeling tired, then pull over in a safe place and have a rest.

## VIN (Tow Vehicle Identification Plate)

All of the Caravans will be fitted with a VIN Plate. These plates will indicate the following:

<b>MANUFACTURER</b> Manufacturer's Name.	<b>TYRE SIZE</b> Dimension of tyres fitted as standard.
<b>DATE OF MANUFACTURE</b> Date produced.	<b>TYRE LOAD RATING</b> Individual load rating of tyres.
<b>GROSS TRAILER MASS KG</b> Maximum loaded weight on the tyres.	<b>TYRE PRESSURE (COLD)</b> Recommended tyre pressures.
<b>AGGREGATE TRAILER MASS KG</b> Maximum loaded total weight.	<b>AXLE/AXLE GROUP LOAD CAPACITY</b> Maximum load capacity of axles.
<b>V.I.N. NUMBER</b> 17-digit identification number.	<b>TARE WEIGHT</b> Unladen weight.
<b>WHEEL RIM SIZE/PROFILE</b> Dimension of rims fitted as standard.	<b>TOW BALL WEIGHT</b> The unladen down weight at the coupling.



# Equipment Operation and Maintenance

## ***Air Conditioners (Air Command)***

To operate the Roof Top Air Conditioner, just follow the below steps:



1. On the sensor panel (see above illustration), press the **ON/OFF** button once.
2. Press the **MODE** button to cycle through the options; **Cool**, **Dry**, **Heat** and **Fan**.

### ***For Cooling***

1. Select the **Cool** mode option.
2. It is recommended that you leave the fan option on **Auto**, however you can change the fan speed to **High**, **Med** or **Low**, by pushing the **FAN** button.
3. To select the temperature, press the **TEMP** up and down arrows, until your required temperature flashes up in the set point.

#### **NB:**

**In approximately five (5) seconds, the display will resume reading the actual room temperature.**

**The compressor will have a delayed start of usually three (3) minutes, before the unit will start to cool down.**

### ***For Fan***

1. Select the **Fan** mode option, by pressing the **MODE** button.
2. Choose any of the three (3) fan speeds by pressing the **FAN** button.

#### **NB:**

**The temperature button is invalid in the Fan only mode**

### ***For Heating***

1. Select the **Heat** mode option, by pressing the **MODE** Button.
2. It is recommended that you leave the fan option on **Auto**, however you can change the fan speed to **High**, **Med** or **Low**, by pushing the **FAN** button.
3. To select the temperature, press the **TEMP** up and down arrows, until your required temperature flashes up in the set point.

#### **NB:**

**After a three (3) minute delay, the compressor will start. Usually the fan will stop and will not re-energize until the heat exchanger has warmed, then the fan will start blowing out warm air.**

### ***For Drying***

The **DRY** mode is used if you would like to dehumidify.

1. Select the **Dry** mode option, by pressing the **MODE** Button.
2. To select the temperature, press the **TEMP** up and down arrows, until your required temperature flashes up in the set point.

#### **NB:**

**The fan speed is locked on low. The compressor will cycle on and off at six (6) minute intervals to extract moisture from the air.**

### ***Sleep Mode***

If the unit is operating in **Cool** mode, press the **SLEEP** button. This will raise the temperature by 1°C over the next hour, and vice versa in the **Heat** mode, it will decrease the temperature by 1°C.

### ***Timer***

The timer can be used to turn the unit off or on, for up to a period of 24 hours.

1. Press the **TIMER** button.
2. Within three (3) seconds, press the **TIMER** button until you set a desired time to turn the unit off.
3. A subsequent press of the **TIMER** button will allow the “**time to start**” the unit.

### ***Locking Function***

This provides the means of locking the unit in the mode and fan settings.

1. Press **temperature down key** simultaneously with the **MODE** button.
2. Hold for three (3) seconds and the **lock** indicator will light.
3. To unlock, repeat the above process.

## Changing °C to °F

1. To change the readout from Celsius to Fahrenheit or vice versa, press **temperature down key** simultaneously with the **Fan key**.

## Care and Maintenance

The Roof Top Air-conditioner is virtually maintenance free, except for the air filter, which should be cleaned with warm soapy water, for optimum performance.

## Awnings

The Carefree Manual Patio Awnings are simple and straightforward to use. Please follow the below instructions:

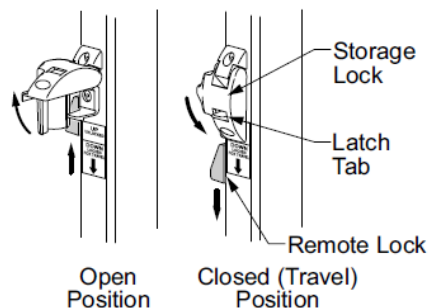
### Opening the Awning



#### CAUTION

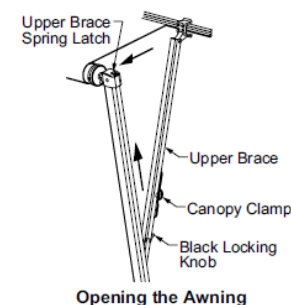
ALWAYS USE THE PULL STRAP TO EXTEND OR RETRACT THE AWNING. DO NOT OPEN OR CLOSE THE AWNING BY HOLDING ONTO THE ARMS. SERIOUS INJURY COULD OCCUR IF HANDS OR FINGERS ARE PINCHED BETWEEN THE ARM AND BRACE.

1. Release the arm travel lock (see illustration below):
  - Press up the latch tab.
  - Then lift the **ARM TRAVEL LOCK** up.
  - Repeat for the second arm.
2. Unlock the roll bar (see illustration below):
  - Located on the right arm, behind the arm travel lock, press the **REMOTE LOCK** up until it stops;



3. Loosen the black lock knob on the upper brace of both arms.
4. Using the **PULL STRAP**, pull the awning out.

5. Push braces up to the top of the arm. The brace sliders have a small spring catch, which latches into the roll bar end plug, when the brace is fully lifted to the top of the arm. (See illustration below).



#### CAUTION

ALWAYS USE THE SUPPORT BRACES TO HOLD THE AWNING OUT IN THE EXTENDED POSITION. FAILURE TO USE THE SUPPORT BRACES MAY RESULT IN THE AWNING INADVERTENTLY ROLLING BACK UP TO THE TRAVEL POSITION POSSIBLY CAUSING INJURY OR DAMAGE TO THE AWNING OR THE CARAVAN.

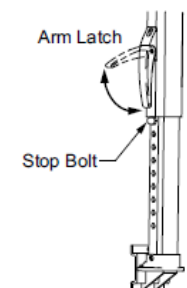
6. While pressing outward on the roll bar to tense the fabric, tighten the black lock knob on the brace. Repeat for the other side.
7. For awnings with canopy clamps
  - Loosen the clamp knob until the shaft portion clears the brace.
  - Swivel the clamp toward the canopy and set the clamp jaws around the fabric.
  - Tighten the knob.

#### NB:

Be careful not to over tighten the knobs, as this will actually cause the clamp to loosen and release the fabric.

### Adjusting the Pitch

(See below illustration)



Adjusting the Pitch

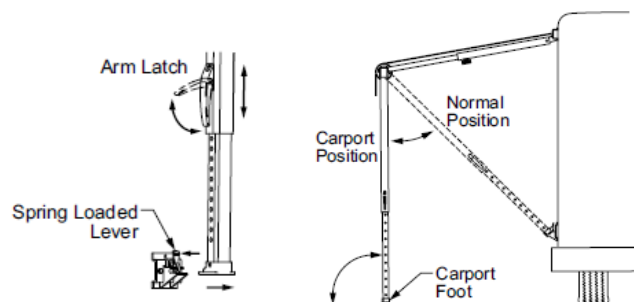
1. Open the arm lever;



- Slide the upper arm channel out until the desired pitch is achieved;
- Close the arm lever. It may be necessary to move the arm up and down slightly for the lock pin to snap into position; and
- Repeat for the second arm.

### Setting arms in the Carport Position

(See below illustration)



- Open the awning.
- After the braces have been locked into position and the black knobs are tightened, push the brake lever to the close position.
- While supporting the arm and the roll bar, release the carport foot from the bottom support bracket. The latch is spring loaded. While holding the latch open, slide the arm from the bracket.
- Set the arm perpendicular to the ground.
- Repeat steps for the second arm.
- Set the brake lever to the open position.
- Secure the arms by staking the feet to the ground.

**NB:**

Stakes are not included with the awning

### Closing the Awning



ONCE THE AWNING ROLLER LOCK IS PLACED IN THE ROLL IN OR CLOSE POSITION THE AWNING IS UNDER FULL SPRING TENSION. IF NOT FIRMLY HELD, THE AWNING WILL ABRUPTLY ROLL UP TO THE STORED POSITION, POSSIBLY CAUSING PERSONAL INJURY OR DAMAGE TO BOTH THE AWNING AND THE CARAVAN.

- If the awning is placed in the carport configuration then:
  - Remove the stakes holding the feet.
  - Set the brake lever to the close position.
  - Swivel the arm back and lock the feet into the bottom mounting bracket.
  - Set the brake lever to the open position.
  - Repeat steps for the second arm.
- Return the arm length to the storage length:

- Open the arm lever and slide the upper arm channel down to the stop bolt.
  - Close the arm lever. It may be necessary to move the arm up and down slightly for the lock pin to snap into position.
  - Repeat steps for the second arm.
- Loosen the black lock knob for the brace.
  - Disengage the spring latch for the brace, located at the top of the roll bar end plug:
    - Slide the brace down the arm. It may be necessary to press out on the roll bar to ease the tension.
    - Repeat steps for the second arm.
  - Firmly grasp the pull strap and set the brake lever to **CLOSE**. The brake lever is accessible by hand when the awning is extended:
    - Press the **BRAKE LEVER** down until it stops.

**Tip:**

The pull strap can slide along the roll bar. Move the strap toward the right end of the roll bar to easily hold the strap and operate the brake lever.

- Allow the awning to roll up slowly until it is completely closed;
- Secure the arms:
  - Press the **ARM TRAVEL LOCK** down until the latch tab clicks.
  - Repeat steps for the second arm.
- Tighten the black lock knob on the braces.

**THE AWNING IS NOW READY FOR TRAVEL AND STORAGE.**

### Care and Maintenance

- \* Periodically check that the fasteners are tight: tighten if need.
- \* Keep the awning fabric and arms clean, by hosing off with water once a month. A thorough cleaning will be needed every two (2) to three (3) years, with natural soap and water.

**NB:**

Never use detergent.

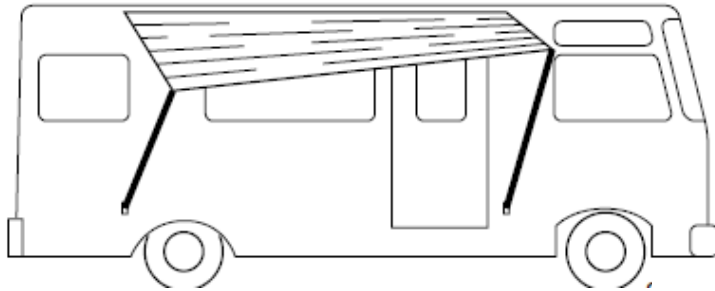
Water should be lukewarm, never more than 100°F.

Air-dry only, and always allow the fabric to dry completely, before rolling up.

- \* If leaking is present through the side hems and poly cords of the vinyl canopy, do not be alarmed as this is normal, due to the stitching being done on a sewing machine. Treat the seams with a quality seam sealer.
- \* When water is collected on the top of the fabric, it is known as pooling. This pooling can cause damage to the awning by stretching or distorting the fabric. To avoid pooling during rain, position one (1) arm at minimum pitch and one (1) arm at maximum pitch (see below illustration).

**NB:**

If wind or extended periods of rain are expected, roll up the awning and secure for travel.



- \* Locking knobs should be periodically loosened and removed, then sprayed with a dry lubricant to prevent binding and locking.
- \* If the arms do not smoothly slide, apply a dry lubricant to them, once they are cleaned and completely dry.

## Break-Away System

Every Caravan has been installed with the Hopkins Engager Break-away System in the event that the Caravan and Tow Vehicle become separated.

The Engager Controller has its own battery enclosed in the housing box. As soon as the Caravan and Tow Vehicle are separate, a pin is pulled from the break-away switch, which immediately allows the Controller to supply power to the electric brakes. The brakes engage to slow the Caravan until a complete stop.

It is important to leave the pin removed until the Caravan's wheels have been chocked, park brake is engaged and the area has been assessed to make sure no further issues could evolve from the pin being replaced into the break-away switch.

### Maintenance:

- \* The Engager Controller has a built in green "Push to Test" switch (see below illustration). The controller must be tested every time before towing.



- \* The seven (7) pin flat trailer plug has been wired with the Engager battery charging system on the reverse (Black - Pin 2). We recommend that the Tow Vehicle has the Black Pin 2 hard wired to a permanent positive (+) 12 volt source to keep the battery charged while in transit.

## Brakes

The Caravan is fitted with electric brakes, which need to be adjusted or serviced from a dealer, approximately every 2000km.

Your trailer brakes are designed to work in conjunction with the Tow Vehicle brakes.

### Shoes and Linings

A simple visual inspection of the brake linings, will tell you if they need replacing. If the lining is; worn (within 1/16" or less), contaminated with grease or oil, or abnormally scored or gouged, then replacement of the lining is essential.

It is important to replace both shoes on each brake and both brakes of the same axle. This is to ensure the balance of your brakes.

### Troubleshooting

Most electric brake malfunctions can generally be traced to an electrical system failure. They must have a complete electrical circuit and any broken or poor wire connections, can lead to poor or no braking.

Mechanical causes are ordinarily obvious, such as; bent or broken parts, worn out linings or magnets, seized levers, loose parts etc.

It is recommended that all new Caravans have a break-in period, to achieve maximum braking performance.

## Bulbs

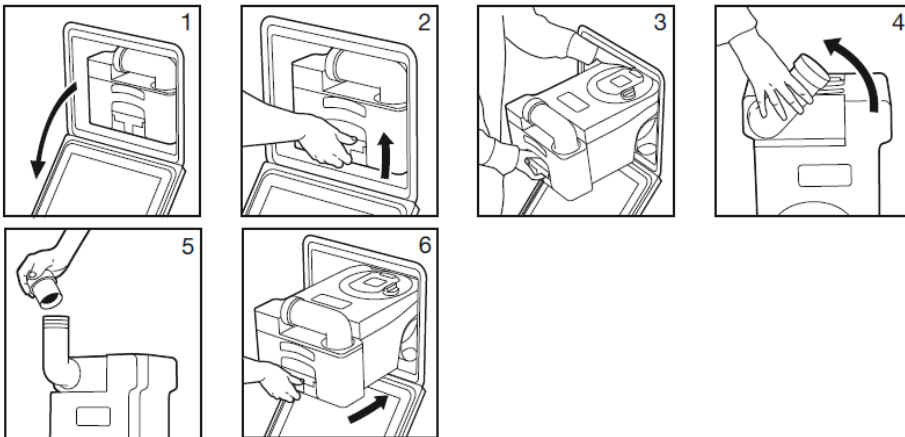
It is advisable to carry some spare bulbs for both the internal and external lights, as heavy vibration while in transit can cause some bulbs trouble.

## Cassette Toilet

The Cassette Toilet is made up of two parts: one permanently fixed and the waste-holding tank. The removable waste-holding tank is located under the toilet bowl and can be removed via a door on the outside of the Caravan.

## Preparing for use

(See illustration below)



1. Open the access door on the outside of the Caravan.
2. Pull the safety catch on the waste-holding tank upwards.
3. Remove the waste-holding tank, by pulling it towards you.
4. Place the waste-holding tank in an upright position: rotate the emptying spout, 90 degrees.
5. Remove the cap: place the measuring cup inside the water funnel and add the required amount of Thetford Toilet Fluid into the waste-holding tank. This ensures a cleaner flush and decreases unpleasant smells.

### **NB:**

**Never add the toilet fluid directly in the toilet bowl or via the blade, as this could damage the lip seal of the tank.**

- a) Fill the waste-holding tank with approximately two (2) litres of water.

### **NB:**

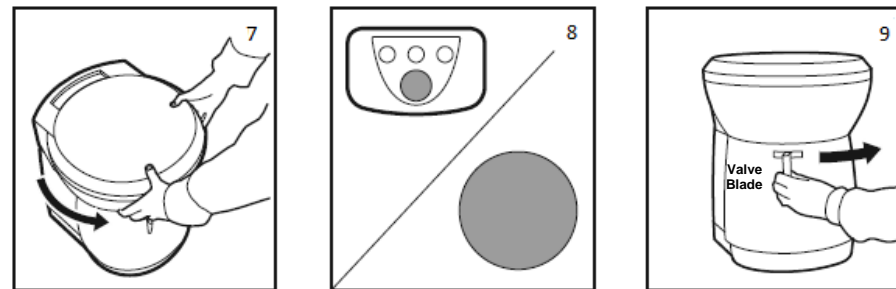
**Keep the water level below the top of the water-filling funnel.**

- b) Remove the measuring cup, screw the cap back onto the emptying spout and rotate it back into the original position.
6. Slide the waste-holding tank back into its original position via the access door. Make sure that it is secured with the safety catch
  - a) Close and lock the access door.

## Using the Toilet

(See illustration below)

It is important to use 2ply biodegradable toilet paper, to help prevent against any blockages.



7. Using both hands and with the seat cover closed, turn the bowl to the desired position.
8. To activate the control panel, press the flush-button once. The control panel display will start and will be activated for approximately five (5) minutes.
  - a) Run water into the bowl by pressing the flush knob briefly or by opening the valve blade by turning the handle anti-clockwise.

## **YOUR THETFORD TOILET IS NOW READY TO USE**

9. After use, open the valve blade (if closed) and flush the toilet by pressing the flush knob for several seconds.
  - a) Close the valve blade after use and when not in use.

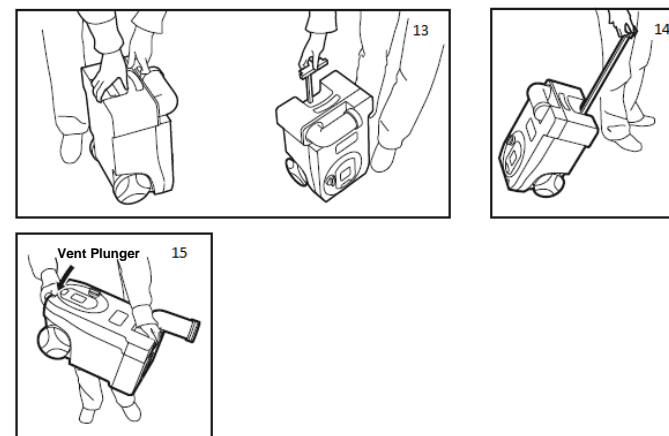
### **NB:**

**Do not travel with water in the bowl, as this may cause spillage.**

**Do not travel with a full flush-water tank, in case of spillage, flooding or other water damage to the Caravan.**

## Emptying the Waste-Holding Tank

(See illustration below)



The waste-holding tank needs to be emptied when the red LED light on the control panel lights up. This indicates that there is approximately two (2) more litres to use, which are no more than 2 -3 further flushes.

10. Make sure that the valve blade is closed.
11. Open the access door located outside the Caravan.
12. Pull the safety catch on the waste-holding tank upwards, and remove the waste-holding tank, by pulling it towards you.
13. Place the waste-holding tank in an upright position.
  - a) Pull out the handle at the top of the tank, and the wheels at the bottom.
14. With the handles upright and locked into place, wheel the waste-holding tank to an authorised waste disposal point.
15. Push the handle back into its locked position.
  - a) Turn the emptying spout upwards and remove the cap.
  - b) Hold the waste-holding tank in a way that you can still operate the vent plunger with your thumb.
  - c) To prevent splashing while emptying, depress the vent plunger.
16. After emptying rinse both the tank and blade thoroughly with water.

**NB:**

**The vent plunger should only be used when the emptying spout is pointing downwards.**

**Do not shake the waste-holding tank, as it may cause damage inside the tank**

**Do not use a high-pressure cleaner on the tank, as it may cause damage.**

**Ensure that all dumping of the sewage is done in an approved dumping station. Due to the chemical deodorants contained in the toilet, it can sometimes affect the sewage or septic systems.**

## ***Cleaning and Maintenance***

Depending on the amount of use, the toilet should be cleaned and maintained regularly.

**NB:**

**Never use bleach, vinegar or other powerful household cleaners, as it may cause permanent damage to the seals and other toilet components.**

## ***Cleaning the Toilet Bowl***

1. Squirt cleaner into the bowl. Read the product for instructions.
2. Flush the toilet bowl with water.
3. Squirt some cleaning product onto a damp cloth and wipe down the outside of the toilet.
4. Clean the seat and cover;
  - a) To remove, lift the seat and cover assembly and pull the round pins (inside the assembly) outwards from the pinholes. After cleaning, replace the seat and cover by positioning the round pins in front of the pinholes and push the lid and seat downwards.

## ***Cleaning the Waste-Holding Tank***

It is advised to clean the waste-holding tank, once a season.

1. Open the access door on the outside of the Caravan.
2. Pull the safety catch on the waste-holding tank upwards, and remove the waste-holding tank, by pulling it towards you.
3. Rotate the emptying spout, 90 degrees and remove the cap.
4. Put the recommended dosage of Thetford Cassette Tank Cleaner in, along with approximately five (5) litres of luke warm water.
5. Place cap back on, and shake the tank lightly.
6. Leave the tank for up to 16 hours, with the water and cleaner in it.
  - a) Shake the tank, periodically during the 16 hours.
7. Completely empty the tank.
8. Rinse the tank out with fresh water and completely empty again.

## ***Chassis***

As the Caravan's chassis is the important structural part of a Caravan, it is advised to regularly inspect the chassis for any visual damage, that may be on the; suspension, tyres, wheels, brakes and coupling. If you are in any doubt, it is better to get it checked with a dealer.

## ***Cleaning***

The chassis has been galvanised in a thick tough zinc coating, to help prevent against corrosion. It is a long-term protection, however it is recommended to promptly wash off any potential contaminants with clean water. Obvious contaminants are chloride and sulphur compounds, including salts from sea, air and soil. If the contaminants are left on, it can cause permanent staining.

Natural ageing of the galvanised coating will turn the chassis to a grey colour.

## ***Corner Stabiliser Legs***

Corner Stabilisers (see below illustration) are designed so that the Caravan will not tip towards one end when walking inside the Caravan.

When the Caravan is stationary, the stabilisers should be down touching the ground, without taking any weight of the Caravan. The legs can be adjusted using the handle with a built-in hex head.

**NB:**

**Stabilisers are not jacks and should never take on partial weight of the van, as this may cause the stabilisers to bend. Stabilisers that are bent due to excess weight being applied to them are NOT COVERED UNDER WARRANTY.**

## Maintenance

Periodically spray the swivel bracket handle lock prongs and swivel bolt, with Inox or WD40 to prevent binding.



## Coupling

Couplings should be checked on a regular basis, for any signs of loose bolts connecting the couplings to the chassis. It is not advisable to grease the ball of the coupling, as this can lead to a build-up of dust and can thereby cause more wear due to abrasion. A silicone spray for a pressure can or a light machine oil will be sufficient without accumulating dust. If unsure, then get a dealer to check.

## Cyclones

November to April is cyclone season in Australia's North. Severe cyclones can cause; injury and loss of life, major structural damage and disrupt electricity, gas and water supplies.

If you are living in a Caravan during a cyclone season, you need to be well prepared by having an emergency plan ready to enact before a cyclone has formed. You should decide what you would do with your Caravan; know how to tie it down and where you will go if a cyclone threatens the area.

This applies to people staying in Caravan parks, travelling with Caravans through the region or with Caravans in remote campsites.

## Cyclone Contacts

When a cyclone is coming community alerts will be issued by your local State Emergency Authority.

You can find community alert information on:

- ABC and other local media
- State Emergency Contacts
  - Queensland – 132 500  
<http://www.emergency.qld.gov.au/>
  - Northern Territory – 131 444  
<http://www.pfes.nt.gov.au/>
  - Western Australia – 1300 657 209  
<http://www.fesa.wa.gov.au/Pages/default.aspx>
- Bureau of Meteorology (BoM) Contacts
  - BoM's Cyclone Warning Advice Line – 1300 659 210  
<http://www.bom.gov.au/>

There are four stages of alerts: Blue, Yellow, Red and All Clear.



Due to their lightweight construction, Caravans are particularly susceptible to wind damage and are prone to being blown over. One of the essential items required to secure your Caravan are purpose built ground anchors.

## High Wind Anchor points on your Work Caravan

Your Work Caravan has been installed with four high wind tie-down points. These are located beside the stabiliser legs, both front and rear of the Caravan.





### ***Ground Anchor Points must be installed on Site***

These ground points are where you will secure your tie-down chains to the Caravan chassis.

- \* If you are staying in a commercial Caravan park in the North of Australia, the ground anchor points are likely to be built into your van site.
- \* If your Caravan is located in a remote campsite, you need to have the appropriate purpose built tie-down anchors installed well ahead of the cyclone season. At Work Caravans, we recommend the Mega Anchor System.
- \* If your Caravan is **not** in a location where there are suitable tie-down anchors, you will need to relocate your Caravan to a safer storage site such as a large shed. As an alternative, if conditions are safe to do so, tow your Caravan to another town away from the predicted cyclone area.
- \* If you have a Caravan housed in your backyard or on a business premises you need to have the appropriate purpose built tie-down anchors installed well ahead of the cyclone season. This job will require professional assistance from a professional contractor. You may also need approval from your local council.

### ***Mega Anchor System Installation Instructions***

#### **Tools and Hardware Needed**

- \* Mega Anchor alignment tool and multi tool (IT32# - IT3250#)
- \* Mega Anchor jack hammer dolly (fits a 30mm round hex jack hammer)
- \* Mega Anchor hand dolly
- \* 1700watt, 30mm round hex Jack Hammer
- \* Electric or air powered drill
- \* Hex bit
- \* Drill bit
- \* TTK Screws (class 4 20 x 22)
- \* Phillips Screw Driver
- \* Mega Anchor Removal Tool

#### **Materials Needed**

- \* 32NB Extra light galvanised pipe
- \* Transport Grade 70 10mm 6 Ton rated
- \* Ratchet Load Binder 10mm x 4 units

#### **Products Needed**

- \* **MA2# - Standard Building Mega Anchor**  
(Receives piles and riser – 2mm thick 38ID 42OD extra light galvanised pipe)
- \* **MA4# - Angle Top 75mm x 75mm x 100mm**  
(Receives - 2mm thick 38ID 42OD extra light galvanised pipe)

#### **Installation**

The Mega Anchors should be installed as close as possible to the Caravan tie-down points: being careful not to create a trip hazard.

#### **Marking out where the anchors will go**

1. Using a screwdriver in the centre of the chosen area, make a hole by pushing a screwdriver into the ground and moving it in a circular motion. This hole is for the point of the alignment tool.

#### **Aligning the anchor**

(See below illustration)

2. Slide the anchor of the end of the alignment tool and put the spike of the alignment tool into the hole, as created in step 1.
  - a) Using the knocker, drive the point of the alignment tool into the ground until the first sleeve of the alignment sits on top of the anchor. Do not drive the anchor too far into the ground as it can make it difficult to insert the tek screws later.



#### **Installing the Anchor**

(See below illustration)

3. Insert the 3 pre-cut piles into the Mega Anchor guide holes.
  - a) Place the jack hammer in one of the piles (be sure to hold the alignment tool, due to the weight of the jack hammer, which can pull the anchor out).
  - b) Drive the 1<sup>st</sup> pile to about 1/3 of the way.
  - c) Check the level and adjust accordingly.
  - d) Finish driving the 1<sup>st</sup> pile to half way then move on to the 2<sup>nd</sup> pile.
  - e) Repeat steps 3b – 3d until all 3 piles are done.
  - f) Drive all 3 piles into the ground, so that they are level with the guide.





### Fixings

(See below illustration)

4. When the piles have been installed, drill the tek screws into the four (4) guide holes of each pile.



### Riser

(See below illustration)

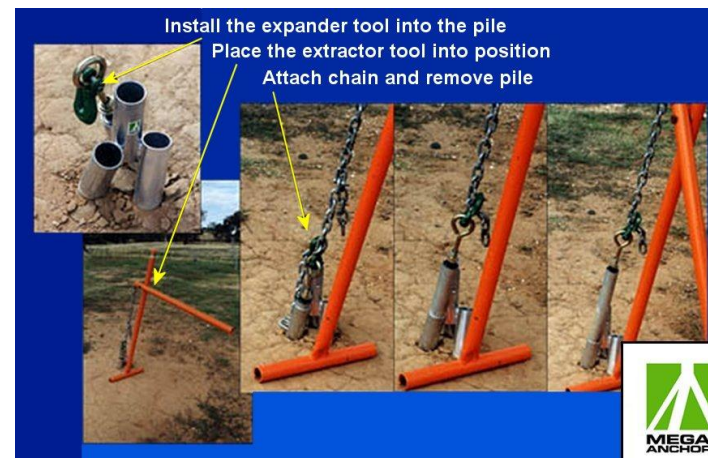
5. When all the anchors have been installed, insert the centre fixing pole into the centre of the anchor and gently tap the fixing pole until there is enough pole remaining for the custom built Angle Top to sit flush against the anchor.
  - a) Slide on the custom built Angle Top and screw in 4-6 tek screws into the guide holes and one (1) bolthole.



### Fixing the Chain

6. Insert the Transport Grade 70 10mm 6 Ton rated chain through the Caravan tie-down point and the Mega Anchor tie-down point, using the Ratchet Load Binder 10mm.
  - a) Tighten the chain, so it is firm, being careful not to over tighten, causing the chassis or stabiliser legs to bend or become damaged.

### Removing the Mega Anchor



### Additional Cyclone Safety Tips

- \* Apply the park brake and wheel chocks to the Caravan.
- \* Make sure you store all of your outdoor equipment in a safe place. This includes the annex, awnings, chairs, tables, garbage bins and other items.
- \* Heavy or bulky items that cannot be put in the van should be laid on their side, roped together and tied to ground anchor points with strong rope.
- \* Board or heavily tape Caravan windows.
- \* Draw curtains and lock doors.
- \* Turn off the electricity, water supplies and gas at the meters and or cylinders.

Now that you have secured and prepared the Caravan for an impending cyclone, it is recommended that you consult a licensed Engineer to assess the tie-downs, as soil composition and environmental conditions vary greatly, and requirements that are more specific may be necessary dependent upon your individual location.

As with all cyclones, there are many dangers: additional to the high winds, you can encounter flying debris, storm surges and possible flooding. With these dangers in mind, it is important that you re-evaluate the situation regularly and keep updated with the local Government reports. Always remember that the health and safety of you, your work force

and/or family is the priority. We recommend that you, your work force and/or family take refuge in a Government Cyclone Shelter, or as recommended by the local authorities.

## ***Door Locks***

Door locks should be checked on a seasonal basis, to ensure that it is operating properly and that after closing the door, it is not likely to spring open during travel.

## ***Electrical***

The Caravans 240V electrical system has been fitted according to AS/NZS 3000:2000. If there are any faults or changes that need to be made, get a qualified licensed electrician, **DO NOT ATTEMPT IT YOURSELF.**

### ***Circuit Breaker***

A circuit breaker (JVM1 two (2) pole) is a safety device designed to 'trip' or disconnect the power if an overload in the 240V circuit occurs. If the circuit breaker trips, simply reset it.

If it continues to trip, switch off all the appliances and check individually if there is a fault in the appliance. If the problem still occurs, then get it checked by a qualified licensed electrician.

### ***Safety Switch***

The Caravan has been fitted with a safety switch (MCB/RCD Double Pole Circuit Combo), which will turn all electrical currents off, when it notices an overload or a change in the current flow, such as electrocution etc. If this switch clicks off, then simply reset it.

The combo safety switch has an orange test button, which should be done on a monthly basis, to check if there are any faults with the switch.

### ***Safety***

- \* Check electrical appliances for frayed cords and any other visible damage, replace if need be.
- \* Keep water away from electrical appliances.
- \* If using an external power cord, ensure it is not frayed and adequately covered from water.
- \* Do not overload electrical outlets.
- \* Use only qualified licensed electricians for any repairs.
- \* Do not tamper with switched on appliances or outlets.
- \* Never poke any metal objects into the outlets or appliances.

- \* If fitting extra accessories to the Caravan, it is advised to check with us, the Manufacturer, to ensure that no drill holes will go into hidden electrical cables.

## ***Exterior Care***

The exterior of the Caravan should be cleaned on a regular basis, using soapy water and a light bristled brush. Never use abrasive materials or cutting compounds as this could 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 turpentine, and must be removed with soapy water immediately.

When cleaning the windows use a chamois or a sponge, to avoid any harsh scratching.

If there is an awning, roll out the awning and clean with warm soapy water. Make sure that it is properly rinsed cleaned and that it is completely dry, before rolling away.

## ***Fire Safety***

### ***Combustible Material***

Keep combustible material clear and away from all heating or cooking appliances

### ***Means of Escape***

- \* Know where the exit doors are.
- \* Ensure all of the exit doors are operational and have a clear pathway.

### ***Fire Gear***

All of the Caravans are fitted with smoke alarms and fire extinguishers.

Familiarise yourself of where the fire extinguishers are located in the Caravan. These should always be full and at the correct pressure. Read the instructions of how to use the fire extinguishers and get them annually checked by the local fire brigade.

Ensure that you check the batteries in the smoke alarms every 3 months, and replace batteries if need.

### ***In Case of a Fire***

1. Get everyone out of the Caravan;
2. Turn off the outside gas valve on the gas cylinder;
3. Disconnect the mains electricity supply;

4. Raise the alarm and call the fire brigade; and
5. Attack fire only if it is safe to, with the fire extinguisher, and/or water if applicable.

### **Fire Precautions**

- \* Do not leave children unattended in a Caravan.
- \* Do not put paper, wood or combustible items, in an oven, microwave or toaster while the appliance is on.
- \* Never have an open flame, where there is a strong persistent smell of gas.
- \* Avoid overloading electrical outlets.
- \* Avoid water coming into contact with electrical outlets.
- \* When you are fatigued, try not to smoke while in bed.

## **Gas Cylinders**

Gas cylinders have a life expectancy of 10 years, before they need to be restamped and certified by an authorised company to warrant that the bottle is in a good and safe condition.

- \* If the gas cylinder is going to be exposed to salty conditions, it is recommended to cover the gas cylinder to avoid a build-up of rust.
- \* The cylinder must be stored in an upright position.
- \* Cylinders not stored under cover should get a coat of paint, once a year to help prevent against rust formation.
- \* Ensure that the gas cylinder valve is turned off, when storing or in transit.

### **Gas Leaks**

Gas leaks can occur due to the vibration of the Tow Vehicle, or damage that can be caused by stones or rocks flicked up in transit.

If you suspect a gas leak, then apply soapy water to the gas cylinder and observe the liquid to see if any bubbles are forming.



**CAUTION**  
NEVER USE A MATCH TO FIND A GAS LEAK

In the event that there is a smell of gas, you should immediately:

1. Extinguish all open flames.
2. Keep bystanders away.
3. Do not touch electrical switches.
4. Shut off the gas valve on the gas cylinder.
5. Open all doors and any windows.
6. Leave the Caravan, until the smell clears.

7. Have the gas cylinder and gas pipes checked and cleared by an authorised gas installer.

### **Gas Safety**

#### **Auto Gas**

Never fill a LPG gas cylinder with auto gas, due to the various components in auto gas; it could lead to a health risk when in use. Always fill up the gas cylinder by an authorised re-filler, using liquid propane gas.

#### **Gas Connections**

Annually check the gas connections for any leaks, by using soapy water and watch for the formation of any bubbles.

#### **Gas Cylinders Disconnection**

Always cover or tape up the gas pipes and regulator, once the cylinder has been disconnected.

Remember to handle the LPG cylinder with care, ensure that there are no open flames and the gas valve is turned off during the disconnection process.

#### **Gas/Electrical Appliances**

- \* For safe operation, ensure there is good ventilation present when using the cooking equipment.
- \* Maintain that all the doors and windows are open.
- \* Never use the cooking appliances, as a personal heating source.

#### **Gas System Tips**

- \* Close appliance valves before opening the gas cylinder valve.
- \* Close cylinder valve when appliances are not in use, or when storing the Caravan. All additions and alterations to the gas system, need to be performed by an authorised person.
- \* Everyone should familiarise themselves with the LPG odour, to assist in the detection of leaks.
- \* Check regularly that all ventilators, flues and vents are clear.

## **Generator**

### **Safety Precautions**

#### **Engine Exhaust**

- \* Inspect for exhaust leaks at every start up and after eight (8) hours of continuous running.

- \* Do not operate the generator when the Caravan is parked in a confined space, such as a garage.
- \* Learn the symptoms of carbon monoxide poisoning.

### Generator Voltage

Generator electrical output connections must be made and installed by an experienced and trained electrician.

### Diesel Fuel

- \* Do not smoke or turn on or off any electrical switches, where fuel fumes are present, or in areas sharing ventilation with fuel tanks or equipment.
- \* Keep flames, sparks, pilot lights, arc-producing equipment and all other sources of ignition well away.
- \* Fuel lines must be secured, free of leaks and separated or shielded from electrical wiring.

### Moving Parts

- \* Disable the generator before servicing.
- \* Do not wear loose clothing or jewellery near moving parts such as PTO shafts, fans, belts and pulleys.
- \* When not servicing, always keep guards in place over fans, belts, pulleys and other moving parts.

### Battery Gas and Acid

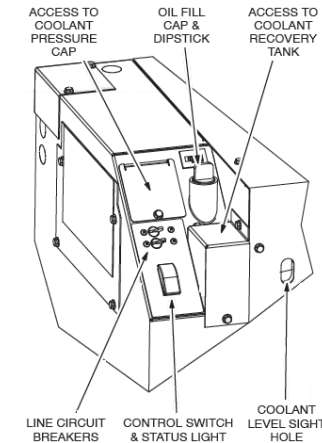
- \* Wear splash-proof safety glasses.
- \* Do not smoke or have any open flames or sparks near the battery.
- \* To reduce arcing when disconnecting or reconnecting the battery, always disconnect the negative (-) battery cable first and reconnect it last.

### General Precautions

- \* Keep children away from the generator.
- \* Do not use evaporative starting fluids. They are highly explosive.
- \* To prevent accidental or remote starting while working on the generator, disconnect the negative (-) battery cable at the battery.
- \* Keep the generator and compartment clean. Excess oil and oily rags can catch fire. Dirt and gear stowed in the compartment can restrict cooling air.
- \* Make sure all fasteners are secure.
- \* Do not work on the generator when you are mentally or physically fatigued, or under the influence of alcohol or drugs.
- \* Engine components can be hot and cause severe burns. Hot coolant under pressure can spray and cause severe burns.
- \* Use personal protective equipment when performing periodic maintenance operations, such as gloves, safety glasses etc.

### Operator Console

(See illustration below)



### Control Switch

The switch is used to start and stop the generator, prime the engine fuel system and restore the fault code (blinking status light).

### Status Light

This LED light blinks rapidly during the preheating and cranking stage. After the generator starts up, this light will continuously stay on, indicating that the generator is running and that the starter is disconnected. If the generator shuts down, this light will blink in a coded fashion, indicating the fault (see Troubleshooting below).

### Line Circuit Breakers

The line circuit breakers protect the AC power leads connected to the generator.

### Coolant Pressure Cap

It is located under the access plate. Fill coolant here when refilling the system.

### Coolant recovery Tank

The recovery tank is mounted inside the generator and provides for coolant expansion. The coolant level is visible through the sight hole on the front of the generator.

### Oil Fill Cap and Dipstick

Check and fill engine oil.

## Operation

### Pre – Start Checks

- \* Check for signs of fuel and exhaust leaks.
- \* Check for any damage to the exhaust system.
- \* To prevent overheating check that the generator has clear air inlets and air outlets. Remove any objects that may be blocking it, or repark the Caravan.



- \* Turn off air conditioners and other large appliances.

### Priming the Fuel System

The fuel system should be primed after replacing the fuel filter or running the generator out of fuel.

To prime the fuel system hold the control switch down in its **STOP** position for at least one (1) minute (starts in two (2) seconds).

### Starting the Generator

If there are no fuel, exhaust or coolant leaks, then it is safe to start the generator from the control panel.



**EXCESSIVE CRANKING CAN OVERHEAT AND DAMAGE THE STARTER MOTOR. DO NOT CRANK FOR MORE THAN 30 SECONDS AT A TIME. WAIT AT LEAST 2 MINUTES BEFORE TRYING AGAIN.**

1. Push and hold the switch at **START** until the generator starts. The status indicator light on the switch flashes during preheat and cranking. It will come on solid when the starter disconnects, indicating that the generator is running.

#### NB:

**If the generator does not start after several tries, then see Troubleshooting below.**

**For top performance and engine life, especially during cold weather, allow the generator engine to warm up for two (2) minutes before turning appliances on.**

### Stopping the Generator

1. Turn off all air conditioners and other large appliances, to let the generator engine cool down for two (2) minutes.
2. Then push the switch on the control panel to **STOP**.

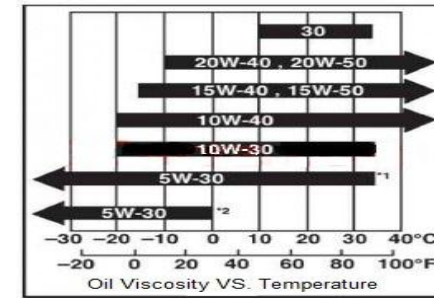
### Resetting Circuit Breakers

If the generator trips, it either short-circuited or there are too many loads running. The generator will however continue to run after a circuit breaker trips.

If a circuit breaker trips, disconnect or turn off as many loads as possible and reset the circuit breaker, by turning the circuit breaker switch to **OFF** and turn it back to **ON** to reconnect it. If the circuit breaker trips straightaway then either the electrical distribution system has a short or the circuit breaker is faulty. A qualified electrician can resolve this.

If the circuit breaker does not trip, reconnect the loads, one by one, up to a total load number that does not overload the generator or cause another trip.

### Operating in Cold or Hot Weather



- \* Make sure that the oil viscosity is appropriate for the cold or hot weather (see illustration above).
- \* Keep the generator clean and perform Periodic Maintenance Schedule (see below).

### Operating in Dusty Environments

- \* Do not let dirt and debris accumulate inside the generator compartment.
- \* Keep the generator clean.
- \* Perform air cleaner maintenance more often. See Periodic Maintenance Schedule (see below table).
- \* Change engine oil more often. See Periodic Maintenance Schedule (see below table).
- \* Keep containers of engine oil tightly closed to keep dust out.

### Breaking in a New Engine

For top engine performance, proper engine break in of the generator is recommended.

Run the generator at approximately ½ of the rated power for the first two (2) hours. Increase to ¾ rated power for two (2) more hours.

Check oil level twice a day or every four (4) hours during the first 24 hours of operation and change the oil and oil filter after the first 50 hours of operation.

### Exercise the Generator

If the generator is not used very often, then it is important to exercise it at least every two (2) months. Run the generator on ½ rated power, for two (2) hours.

This exercising will help the engine by driving off any moisture, re-lubricates the engine, replaces stale fuel and removes oxides from electrical contacts.

### Storing the Generator

Proper storage is essential for preserving top generator performance and reliability.

1. Push the generator line circuit breaker **OFF**.

2. Change the engine oil and attach a tag indicating the oil viscosity.
3. Disconnect the battery cables (negative ( - ) cable first) and store the battery according to the battery manufacturer's recommendation.
4. Plug the exhaust tail pipe, to keep out dirt, moisture and bugs etc.
5. Close the fuel supply valve (if applicable).

### Returning the Generator for Service after Storage

1. Check the oil tag on the generator and change the oil, if need.
2. Reconnect the battery (negative (-) cable last).
3. Remove the plug from the exhaust tailpipe.
4. Change the air filter, if it is dirty.
5. Open the fuel supply valve, if applicable.
6. Inspect the generator for any leaks or damage.
7. Push the generator's line circuit breaker **ON** to start it.

### Periodic Maintenance Table

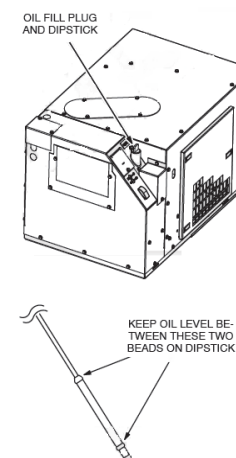
Maintenance Operation	Every Day	After first 50 hours	Every Month	Every 150 hours	Every 500 Hours	Every 1000 Hours
General Inspection	X					
Check Engine Oil Level	X					
Check Engine Coolant Level	X					
Clean and Check Battery			X <sup>2</sup>			
Clean Spark Arrestor				X <sup>3,7</sup>		
Change Engine Oil and Oil Filter		x		X <sup>1,2,3,4</sup>		
Replace Engine Air Filter					X <sup>1,3</sup>	
Replace Fuel Filter					X <sup>3</sup>	
Check Coolant Anti-Freeze Protection					X <sup>3</sup>	
Flush Coolant System						X <sup>6</sup>
Replace Coolant Pressure Cap						X <sup>6</sup>
Replace Engine V-Belt (Coolant Pump)						X <sup>6,7</sup>
Replace Coolant Hoses and Thermostat						X <sup>6,7</sup>
Adjust Engine Valve Lash						X <sup>6,7</sup>
Service Fuel Injectors						X <sup>6,7</sup>
Check Generator Bearings, Drive Belt, Belt Tensioner and Drive Coupling						X <sup>6,7</sup>

- 1 - Perform more often when operating in dusty conditions.  
2 - Perform more often when operating in hot weather.  
3 - Perform at least once a year.  
4 - Perform every 75 hours when using high sulphur fuel  
5 - Perform at least once every two (2) years.  
6 - Perform at least once every five (5) years.  
7 - Must be performed by a qualified mechanic

### Conducting General Inspections

### Oil Level

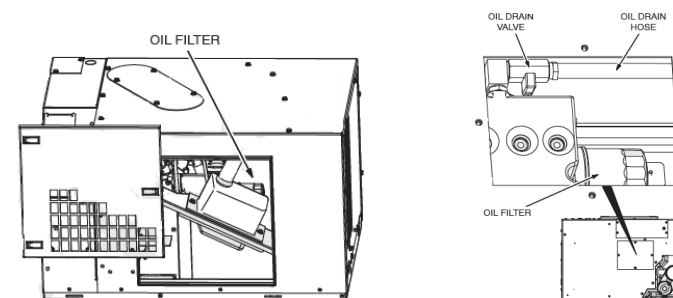
(See illustration below)



1. Check engine oil level, by pulling the plug and dipstick out of the oil fill neck.
2. Wipe the dipstick clean and replace back into the fill neck, until it clicks back into place.
3. Pull the plug and dipstick out again and check the oil level on the dipstick.
4. Add or drain the oil as necessary, to keep the oil level between the high and low beads on the end of the dipstick.

### Changing the Engine Oil and Filter

(See illustration below)



1. Run the generator until warm and shut it off.
2. Pull the oil dipstick out a couple of inches (50mm) so that the oil will drain faster.
3. Remove the front and bottom access cover and direct the end of the drain hose into a container;
4. Open the drain valve and start to drain all of the old oil.
5. Close the drain valve.
6. Spin off the oil filter and clean the filter-mounting surface on the engine block.



7. Remove the old gasket (if it remains). Make sure that the new gasket is in place on the new oil filter.
8. Apply a thin film of clean oil to the gasket. Spin the new filter on until the gasket just touches the block. Turn it an additional ½ to ¾ turn, making sure not to over tighten.
9. Refill with 1.9 Litres of oil and then check the oil level.
10. Secure the access cover.

## ***Handbrake***

The handbrake is located on the chassis at the front of the Caravan. Before transit, it is important that you release the handbrake, otherwise fail to do so, may lead in the brakes overheating and cause bearing failure.

## ***Hot Water Systems***

### ***Burner Pressure Adjustment***

No adjustment should be necessary providing the gas inlet pressure is correct. Burner pressure adjustment is necessary when converting to a different type of gas or replacing the PCB. If this needs to be carried out, then get an authorised service person to do it.

#### **NB:**

**The combustion fan continues to operate approximately seven (7) minutes after the unit is turned off. This is normal and not a fault.**

### ***In Case of Difficulties***

If the water heater ceases to operate then:

- \* Check that the electricity supply is available, by checking if the temperature is displayed at the control panel.
- \* Check that the gas supply is turned on.

If the water heater still does not work, then contact an authorized service person, as there are no user adjustments contained within the appliance.

### ***Safety Instructions***

- \* Always check the water temperature by hand before entering into the shower, as the temperature may have fluctuated.
- \* Do not touch the cover or flue outlet when the water heater is in operation.
- \* Keep flammable materials, away from the water heater.
- \* Water flow needs to be more than 3L/min to operate the water heater. Hot water may vary at low water flows, or the water heater may switch off without warning.

- \* Always get the system serviced on an annually basis.
- \* The Priority switch will override the main controller if safety is threatened.



#### **WARNING**

**IF THE WATER HEATER; DOES NOT OPERATE, BURNS WITH A YELLOW FLAME, LEAKS WATER OR A GAS SMELL IS EVIDENT, THEN TURN OFF THE WATER HEATER AND CONTACT THE LOCAL GAS AUTHORITY OR AUTHORIZED SERVICE PERSON.**

### ***Temperature Control Operation***

1. Turn the main temperature selector **ON** by pressing the Operation switch **ON**, the control will display 40°C.
2. Adjust the setting control switch if a different temperature is required.
3. To transfer operation to the bathroom or sub control, press the **PRIORITY** switch on the bathroom or sub control and adjust the temperature as required.
4. The appliance can also be switched on at any of the selectors by pressing the **ON** button.
5. Priority can be cancelled at the main control by switching **OFF & ON** (except if water is running).

## ***Jockey Wheel***

Some caravans have been installed with a heavy duty swivel jockey wheel, fitted with a 750kg rated load.

- \* It is possible to grease the internal thread, by removing the jockey wheel so that the top section of the jockey wheels comes away from the bottom tubular section.

### ***Adjustable Stand with Swivel Bracket***

As an alternative to the jockey wheel, some Caravans are fitted with a 1250kg rated adjustable stand with swivel bracket.

- \* Periodically spray the swivel bracket handle lock prongs and swivel bolt with Inox or WD40 to prevent binding.

## ***Macerator Toilet***

Always use 2-ply biodegradable toilet paper, when using the macerator toilet.

## Cleaning and Maintenance

Depending on the amount of use, the toilet should be cleaned and maintained regularly.

### NB:

**Never use bleach, vinegar or other powerful household cleaners, as it may cause permanent damage to the seals and other toilet components.**

## Cautions

- \* Do not apply heat or a flame to the hose.
- \* Do not apply sealing compounds to any hose connections.
- \* Do not use thick liquid toilet cleansers or bleach, as they may cause damage to the valves, gaskets and seals.

## Troubleshooting

**Waste cannot be pumped out, due to clogging:**

(See blow illustrations)

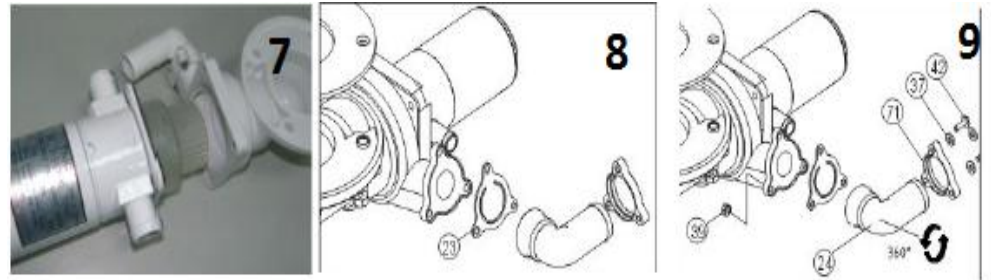


1. Untighten the mounting screws of both sides of the toilet.
2. Remove the toilet from the wall.
3. Disconnect the toilet inlet/outlet pipes from the plumbing system.



4. Disconnect the pumping inlet and discharge hoses.

5. Reset the toilet on the surface carefully.
6. Remove the four screws.



7. Pull out the complete motor, pump and macerator assembly from the base. Clean out the clogging materials.
8. After cleaning, install the non-return valve back into position.
9. Install the outlet port and fasten it with screws.

## Mattresses

Mattresses should only be cleaned with warm soapy water to remove any stains and sweat.

Regular vacuuming of the mattress will help clean the inside of the mattress and help prevent against bed bugs.

If the mattress is foam, a considerable amount of time is needed for the drying purposes. If the foam is not properly dry, then it can lead to foam deterioration and cause a damp smell.

## Off Road Conditions

Due to the nature of a dirt road and the bumpiness, regular checks on the wheel nuts, tightness of suspension bolts and wheel bearings, need to take place on a regular basis.

## Safety Chain

Your drawbar has two (2) safety chain anchor points, these have been pre-installed with 10mm Galvanised long link 4177 2500kg rated trailer chain and 10mm Hammer Locks.

Chains must be attached to the tow vehicle with a 2500kg rated 10mm D-shackle as per the tow bar instructions.

## Maintenance

Inspect Chain, Hammer Locks and D-shackles for damage and replace if necessary.

**NB:**

Hopkins Engager Break-away Switch cable is NOT to be attached to the same anchor point as the Safety Chains.

## Showers

### Cleaning and Maintenance

If regular proper cleaning is not carried out, then some discoloration to the shower unit may occur.

- \* Use a sponge that has a non-abrasive scratch pad on one side;
- \* Do not use chemicals that contain bleach, as this will cause discoloration;
- \* Do not use Magic Erasers;
- \* Do not use abrasive commercial products, as this can cause scratching and damage to the shower unit;
- \* Baking soda and white vinegar are good safe products to use when cleaning; and
- \* To help bring up shine and help protect against mildew and mould, ONLY wipe the walls with car wax.



**CAUTION**

MAKE SURE NO WAX GETS ON THE FLOOR, AS THIS WILL CAUSE A VERY SLIPPERY HAZARD WHEN IN CONTACT WITH WATER.

## Suspensions

### Spring Set

- \* Your Series 4, Series 6, or Series 7 Caravan is equipped with the Tandem 4 Roller Rocker Spring Set, (see below illustration).



- \* Your Series 9 Caravan is equipped with the Tri Axle 4.5 tonne Roller Rocker Spring Set, (see below illustration).



### Maintenance

- \* Periodically grease each of the nipples on the outer of the spring set.

### Axles

(See below illustration)



- \* Your Series 4, Series 6, Series 7, or Series 9 Caravan is equipped with the two (2) galvanised 45sq 1600kg rated axles.

## U – Bolts

(See below illustration)



Due to the harsh road conditions, U-Bolts are installed with spring washers, nuts and nylon lock nuts to minimise any chance of becoming loose.

## Maintenance

Periodically check nuts and nylon lock nut tightness and inspect spring washers for breakage.

## Tyres & Wheels

Caravan wheels may look similar to car wheels, however they are usually stronger, with different wheel dimensions. Selecting the correct set of tyres for a Caravan is the most important aspect in regards to the safety, driving and handling of the Tow Vehicle affecting the; stability, reliability and durability.

The law requires the tyres to have a speed rating of at least 120km/h, which relates to the symbol “L” on the tyres sidewall.

### Load Rating

The most important aspect for a Caravan tyre is the Load Rating, which is the load-carrying capacity of a tyre, which is greater than the load that will be carried inside the Caravan once it is fully loaded. It is recommended to have a good safety margin to cater for times when over-loading may be a factor.

The ‘axle group’ (wheels, tyres, axle, wheel bearings and suspension) should be a ‘match set’. When the Caravan is fully loaded each component should be loaded to around 80% of its rating. Tyres should never be put under their maximum stated load capacity on a regular basis.

## Our Recommendation

We recommend the following tyre size for our Caravans:

- \* Standard Series 4, Series 6, Series 7, or Series 9 Caravans = **225/70R15C**.
- \* Food Vans Series 4, Series 6, Series 7, or Series 9 Caravans = **185R14C**.

When buying tyres the following should be taken into account:

- \* The **Tread wear** rating indicates the wear-resistance of the tyre, when it is tested under standard conditions.
  - The higher the number the better.
- \* A **Traction** rating indicates the tyres grade and ability to perform on wet standard surfaces.
  - The ratings from worst to best are C, B, A and AA.
- \* The **Temperature** rating indicates the tyres ability to dissipate heat.
  - The ratings from worst to best are C, B and A.

## Tyre Pressure

The correct tyre pressures, advised by the tyre manufacturer should be adhered to at all times, and the pressures should not be used for unladen and fully loaded conditions. The Tyre & Rim Association has a manual that lists the correct tyre pressure for all sizes and all loadings.

## When to replace Caravan Tyres

The tyres are marked with a six (6) TWI or Δ mark around the edge of the tread, which are tread indicators, these are 3mm high strips. When the strips are visible right across the tyre, the tyre is worn out. Tyres, which are damaged or worn to the legal minimum, tread depth, must be replaced immediately.

It is also advised that tyres should be ideally replaced when they are 5 years old, and should never be used when more than 7 years old. This is based on the likelihood of a tyre problem increasing after such age.

Tyres that have a higher inflation pressure (say 50psi or more) require greater care, and should be closely examined for signs of deterioration from 3 years old and strongly advised not to use them beyond 5 years old.

### NB:

It is not the case that all tyres over these ages will rapidly fail, however the statistical likelihood of a problem occurring increases with the age of the tyre (even when it is not in use, unless kept under very strictly controlled conditions of temperature, humidity, light level etc). The manufacturing date is moulded into the tyre as a 4-number code eg: 5209, which means the 52<sup>nd</sup> week of 2009.

## Changing a Tyre

### Safety First

- \* Pull over in a safe place, clear of passing traffic and on a surface that is flat and hard.
- \* Turn the Tow Vehicle off and place the car in park or in gear if driving a manual. Apply the handbrake and switch on the hazard lights.
- \* Put on the Caravans handbrakes and put down the four stabilizer legs, to prevent any movement or slipping.
- \* Gather all the equipment you need to change the wheel: bottle jack, spare tyre, spare tyre bar etc.
- \* Do not allow any passengers to be inside the Tow Vehicle or Caravan, while changing the tyre.

### Removing the Flat Tyre

1. Using the wheel brace, loosen the wheel nuts slightly as once the car is jacked up, the wheel will spin freely making it hard to remove the nuts.
2. Locate the jacking points underneath the Caravan, using the bottle jack, jack up the Caravan until the wheel just clears the ground.
3. Remove the nuts completely and slide the wheel off.

### Replace the Tyre

1. Line up the wheel holes on the spare tyre with wheel hub and lift the tyre securely onto the hub.
2. Replace the wheel nuts and tighten them by hand; beginning with the bottom nut and then working in a criss-cross pattern. This will ensure that the wheel is seated correctly and secure.
3. Lower the Caravan slowly until the tyre takes the weight of the car before removing the jack.
4. Using the wheel brace, completely tighten the wheel nuts.
5. Place the flat tyre, jack and wheel brace back into their storage place and fasten securely. Remember to get the flat tyre repaired or replaced as soon as you reach your destination.



**WARNING**

NEVER GET UNDER THE TOW VEHICLE WHICH IS ONLY SUPPORTED BY A JACK.

## General Care of Tyres and Wheels

### Tyres

- \* Check inflation pressure regularly.
- \* Tyre treads should be checked regularly and any stones etc should be removed. Considerable damage can be caused to the tyre casing if objects are left embedded. If the tyre has been punctured by a nail or object, then take it to a tyre inspector to get it checked and repaired or replaced if necessary.

- \* Periodically remove the tyre to check the inside of the tyre from any damage or puncture.
- \* Oil, fuel or paint can damage the tyre, immediately remove with detergent.
- \* If the Caravan is not used for a significant length of time, it is best to remove the tyres and store them at a normal inflation pressure, in a cool, dry place and protected from sunlight, heat, ozone concentrations and fuel and/or oil spillages. The tyres can be covered with a natural cloth (eg hessian) for protection, but not plastic.
- \* If wheels must be left on the Caravan, then rotate regularly, so the Caravans weight does not bear on one area of the tyre constantly.
- \* Be sure that all valves have suitable valve caps;

### NB:

When checking the tyres conditions, ALWAYS remember the spare tyre.

### Wheels

- \* Check the rim is clean and free from rust, burrs, cracks and distortions.
- \* Check that the stud holes are not damaged or elongated, and are clean before fitting the studs.
- \* Follow the correct procedure for changing and refitting the wheel, as stated above in "Changing a Tyre".
- \* Steel wheels can be painted to freshen their appearance after a few years use, however be careful not to paint over any damage or deterioration, or get any paint onto the tyre and mating surface. Alloy wheels can be refurbished by polishing and lacquering, by professional refinishers.

## Urinals

### Cleaning

Waterless urinals need to be cleaned on a daily basis and serviced periodically, to operate effectively and avoid odours.

### Daily cleaning

1. Wearing gloves, remove any rubbish from the urinal.
2. Spray the surface with Uriclean.
3. Using a brush clean the surface.
4. Wipe with a clean disposable towel.
5. The urinal is now ready to use again

### Servicing and Refilling

1. Wearing gloves, remove any rubbish from the urinal.
2. Insert the special key into the hole in the stainless steel waste cover that is shaped as a slot.



3. Rotate the key 90 degrees and lift the stainless steel waste cover.
4. Using a small pair of pliers remove the small pipe in the water lock.
5. Remove uric scale deposits from underneath the waste cover and inside of the large PVC pipe with a stiff brush.
6. Ensure that the drain holes in the cover are clear.
7. Flush out the water lock with water to clean out any deposits. Use a brush if necessary.
8. Pour a large bucket of water into the bowl to flush out sewer line.
9. Clean uric scale deposits from the small pipe and relocate into the water lock.
10. Pour water until it reaches the top of the small pipe.
11. Replace the stainless steel waste cover.
12. Pour in a bottle of Urilock over the stainless steel waste cover.
13. Spray around the waste cover with Uriclean and wipe with a cloth.
14. The urinal is now ready for use again.

### Exchanging the Drain Cover and Pipe

1. Wearing gloves, remove any rubbish from the urinal.
2. Insert the special key into the hole in the stainless steel waste cover that is shaped as a slot.
3. Rotate the key 90 degrees and lift off the stainless steel waste cover and place in a bucket of warm water.
4. Using a small pair of pliers remove the small pipe in the water lock and place in a bucket of warm water.
5. The soiled stainless steel cover and small waste pipe can be soaked overnight in a uric scale removing fluid, and then washed under a hot tap and stored for future use.
6. Flush out the water lock with water to clean out any deposits. Use a brush if necessary.
7. Pour a large bucket of water into the bowl to flush out the sewer line.
8. Insert the clean small waste pipe and pour water until it reaches the top of the pipe.
9. Insert the clean stainless steel waste cover.
10. Spray around the waste cover with Uriclean and wipe with a cloth.
11. The urinal is now ready to use again.

## Vinyl Floors

### Cleaning

- \* Sweep or vacuum frequently.
- \* Wash using a damp cloth or mop, using mild detergent.
- \* Clean the vinyl skirts with a sponge or cloth in warm soapy water.

### Don'ts

- \* Do not use abrasive cleaning powders, caustic or ammonia based cleaners, such as bleach.
- \* Don't use a rubber backed mat or drag any heavy rubber items across the vinyl, as it may cause staining.
- \* Do not use petroleum products, eg: paraffin, thinners, turpentine etc or use wax polish

## Water Pump

Your Caravan may be optioned with a pressurised 240V Water Pump.

- \* There is a separate ON/OFF switch for the pump operation
- \* When travelling make sure that the pump switch is turned off.

### Cleaning

#### Unscrewing the Caps

1. Wrap the filter in a thick piece of cloth, to protect it against scratching.
2. Put the clear part of the filter into a vice, so the vice jaws only clamp the nubs. Be careful not to over tighten, as it will crack.
3. Grip the filter and twist anti-clockwise. Don't put too much pressure on the tail which comes out the side of the filter.

#### Washing

1. Wash filter, using only clean water. Do not use any chemicals or solvents.

#### Reassembling

1. Tighten by hand, making sure no pressure is on the tail.

## Windows

Condensation may occur where there is insufficient ventilation or in weather conditions, to avoid this from happening, it is best to leave a window partially opened. Remember to lock while in transit.