AUSTRACK CAMPERS & CARAVANS®

BUILT TOUGH, BUILT TO LAST

USER MANUAL

ALL AUSTRACK HARDFLOOR MODELS

(2024 - 2026)

Please read owner's manual before using the equipment. Third party component manuals should be read in conjunction with this manual. Maintenance guidelines must be met or exceeded, failing to meet these guidelines may result in serious injury or death and property damage. Specification may change without notice.

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Introduction

Welcome to the Austrack family.

This guide has been created to help you become familiar with your new camper and ensure you get the most out of your Austrack investment. Please take the time to read through the following information before setting off on your adventures.

This manual has been written to cover our wide range of Hardfloor Camper Trailers. Please refer to each section to find the information relevant to your specific model.

The manual is available as a download from our website, and we recommend saving it to your mobile phone, so you have access to it at any time.

If you require further assistance, our team is always happy to help—please don't hesitate to give us a call. Our online chat window also includes a troubleshooting guide, and during business hours you can use the chat feature to speak directly with our technical support team.

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Rocklea Showroom
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rocklea@austrackcampers.com.au

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Suppliers, Brands, and Partners

All Offroad Equipment
AusTuff Suspension and Accessories, ARCTIC Fridges, AOE Jockey Wheels
https://www.alloffroadequipment.com.au/
1800 026 337

AOE RV Service Centre
Caravan Service Centre
https://www.aoervservicecentre.com.au/
1300 349 226

ARK
Off Road Jockey Wheels
https://www.arkcorp.com.au/
Customer Service & Support 02 9678 9036

AU FOCUS
Diesel Heater
https://aufocus.com.au/
03 8597 0396

Aussie Traveller
Entry Doors and Windows
https://www.aussietraveller.com.au/
1300 663 868

Cruisemaster
Off Road Trailer Couplings
https://cruisemaster.com.au/
Customer Service & Support 1300 35 45 65

DOMETIC
Air Conditioning, DRS, and Refrigeration
https://www.dometic.com/en-au/support/service-locator
Technical support 1800 21 21 21

Hip Camp
Premium Camping Locations
https://www.hipcamp.com/en-AU

LogMate
Digital Logbook App
https://awchosting.com.au/logmate/
0494 062 330

McHitch Uniglide Trailer Couplings
Off Road Trailer Couplings
https://mchitch.com.au
Customer Service & Support: 1800 624 482

myCOOLMAN
Air Conditioning
https://www.mycoolman.com.au/
1300 072 018

Pedders
Suspension
https://www.pedders.com.au/

REDARC
Electrical System
www.redarc.com.au
Technical support 1300 733 272

RENOGY
Electrical System
https://au.renogy.com
1800 560 588

Seaflo
Water Pumps
https://www.seaflo.com/

Thetford
Refrigeration
https://www.thetford.com/au/
03 9358 0700

TRUMA
Air Conditioning, Refrigeration, and Hot Water Systems
https://www.leisure-tec.com.au/services/
Technical support 1300 072 018

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General Safety Introduction

⚠ WARNING– Before using this product you should read this manual and those manuals supplied by component manufacturers applicable to this product.

This manual is supplied as a reference to required maintenance of your new Austrack Campers Hybrid offroad camper.

Failure to use and maintain the product in accordance with what is outlined in this manual may affect your warranty.

Incorrect and/or insufficient maintenance may cause product failure resulting in property loss, damage or injury or death.

Maintenance intervals are critical for normal use; extreme use may require shorter or additional maintenance intervals. See Maintenance Schedule for more details.

This manual content does not imply, express or other any warranty, the owner should read the Warranty T&C's included in this manual.

Before using this product, you need to be certain that your tow vehicle is suitably rated and equipped to tow the product safely and legally.

The trailer and vehicle pairing must we within the safe "Maximum Towing Capacity", "Ball Weight Capacity" and "Gross Combination Mass" as stated by the vehicle manufacturer.

This Hybrid camper is fitted with electric brakes and a "Breakaway System". Requirements for breakaway systems can vary from state to state. The breakaway battery draws its charge from the house battery system of the Gibb. See Braking Systems section for more details.

Austrack Campers reserves the right to modify an advertised component (e.g., air conditioning unit, stove, inverter) with an item of similar value and quality, due to supply and availability. In order to fulfill orders, all Austrack Campers are subject to change at Austrack's discretion.

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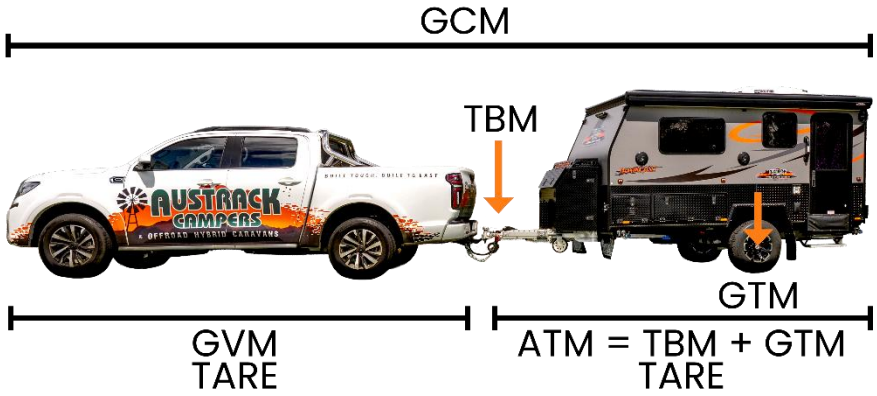
Weight Explanations



GCM Gross Combination Mass. The weight of your fully loaded vehicle and fully loaded trailer when hitched together.

GVM Gross Vehicle Mass. This is the weight of your fully loaded vehicle.

TARE The weight of the vehicle or trailer without water, fuel or any cargo.

ATM Aggregate Trailer Mass. The maximum your trailer can weigh fully loaded.

GTM Gross Trailer Mass. The maximum weight on the axle when fully loaded.

TBM Tow Ball Mass. The weight exerted on the vehicle when hitched. This weight transfers to your vehicle when hitched and becomes a part of the vehicles GVM.

GCM = ATM + GVM

ATM = TBM + GTM

Payload = ATM – TARE

Your Vehicle's towing capacity is the maximum weight your vehicle can legally and safely pull when towing, however it is also crucial to know the Gross Combination Mass allowed by the towing vehicle. State laws regulate all towing requirements, including speed limits. It's crucial to understand and adhere to towing capacity limits for several reasons.

Exceeding these limits is both dangerous and against the law. It also places undue stress on your vehicle's brakes and components, leading to damage and wear. Furthermore, an overweight vehicle usually isn't covered by insurance.

When it comes to towing your camper, one of the most critical factors to consider is the tow ball weight. This often-overlooked aspect of towing can significantly impact your safety and the handling of your camper on the road.

A general rule of thumb is that the tow ball weight should be around 9-11% of the loaded camper's total weight. For example, if your loaded camper weighs 3,000 kg, your ideal tow ball weight should be between 270 kg (9%) and 330 kg (11%).

Load Distribution

When heading away on your next big adventure it is important to load your caravan correctly to distribute weight evenly and achieve a suitable ball weight load and prevent loading in a manner that can cause a caravan to sway and/or roll excessively left and right. The optimum ball weight on a caravan is between 9% and 11% of the total caravan weight.

WARNING: BALL LOADING (DOWNWARD LOAD ON TOW HITCH) MUST NOT EXCEED 350KG OR THE MAXIMUM ALLOWABLE LOAD BY THE VEHICLE MANUFACTURER OR TOW BAR RATING, WHICH EVER IS THE LOWEST.

Exceeding these limits may result in an accident, causing property damage and/or serious injury or death.

• Always load both sides of the caravan evenly

• Load heavy items low and directly over the axle.

• Secure all items to prevent damage to the caravan during travel.

• Consider water tank levels and how they may affect the balance front and back and the percentage of ball weight.

• Overhead cupboards should only be used for lightweight items such as clothes, personal items, bedding etc.

• Never store heavy items in overhead cupboards.

• Heavy cooking equipment should be stored in lower cupboards.

• Tinned and bottled food for cooking etc. should be stored in the pantry drawer.

• Never load in a manner that causes the ball weight to exceed the limit of the tow vehicle.

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Drawbar

The drawbar forms the critical connection between your Austrack camper and the tow vehicle. It is responsible not only for physically coupling the camper to the vehicle, but also for integrating essential safety, braking, and electrical systems required for towing.

Mounted on or around the drawbar are several key components that enable secure attachment, controlled braking, electrical communication, and emergency safety functions. These components work together to ensure stable towing behaviour, legal compliance, and safe operation in both on-road and off-road conditions.

Because the drawbar and its associated systems are exposed to high loads, vibration, and environmental conditions, owners must be familiar with the purpose and correct operation of each component. Routine inspection, correct setup before travel, and safe use are essential to maintaining towing safety and preventing equipment failure.

This section of the Owners Manual provides operating guidance, safety information, and owner-safe inspection advice for the following drawbar-mounted components fitted to Austrack caravans:

- Coupler
- Jockey Wheel
- Trailer Plug and Wiring
- Brake-Away System
- Handbrake
- Anderson Plug

Each subsection should be read carefully before towing and reviewed regularly as part of your pre-departure checks.

McHitch Coupler

Austrack Campers models are supplied as standard with a McHitch Drop-On Off Road Coupler and may be upgraded to the McHitch Automatic Off Road Coupler at additional cost.

McHitch Off Road Couplers are designed specifically for off-road towing conditions and provide exceptional articulation. When correctly connected, the coupler allows up to 90 degrees of movement in all directions, significantly reducing stress on the tow vehicle and camper during uneven terrain, steep inclines, ruts, and tight manoeuvring. This articulation improves towing stability, control, and overall safety when travelling off road.

To ensure correct operation, safety and long service life, the McHitch coupler must be inspected and maintained regularly.

McHitch Drop-On Coupler

The McHitch Drop-On coupler uses a solid steel tow pin fitted to the vehicle's tow tongue. The coupler locates over the pin and is mechanically secured using the rotating head and locking pin.

To assist correct engagement, position the camper so the coupler is slightly forward of the tow pin, with the head of the coupler angled approximately 45 degrees downward toward the pin. Using the jockey wheel, slowly lower the drawbar until the coupler self-locates and drops fully onto the tow pin.

In some cases, minor misalignment may occur due to terrain or vehicle position. A gentle shake or slight repositioning of the drawbar may be required to allow the coupler head to sit fully flish against the tow tongue.

Once the coupler is seated correctly:

1. Rotate the coupler head clockwise to tighten and clamp securely onto the tow pin.
2. Insert the supplied locking pin through the front hole of the coupler.
3. Secure the locking pin using the R-Clip and Key Barrel supplied.

The locking pin provides a secondary safety mechanism and acts as a deterrent against unauthorised removal.

DO NOT TOW unless the coupler is fully seated, tightened, and the locking pin and R-clip are correctly installed.

Quick Tips:

- If engagement stalls, stop, pull forward slightly, and realign to keep the receiver and shaft in a straight line.
- On uneven ground, a small height adjustment with the jockey wheel can help alignment.
- Keep the receiver and shaft clean for smooth auto-locking and reduced wear.

McHitch Automatic Coupler

The McHitch Automatic Coupler provides full off road articulation with a horizontal, reverse on engagement system for quick, repeatable hitch-ups.

The tow vehicle is fitted with a square receiver on the tow tongue. The camper's coupler features a horizontal engagement shaft at the front of the coupler (ahead of the uni-joint). There is no vertical operation when connecting.

1. Align the vehicle so the square receiver is in line with the coupler's horizontal engagement shaft.
2. Reverse slowly. As the receiver contacts and slides straight onto the shaft, the locking handle auto-lifts and snaps into its locked position.
3. Continue reversing until the receiver seats firmly against the coupler body and the handle remains positively locked (it should not move freely).
4. Insert the locking pin through the aligned holes in the receiver and shaft.
5. Secure with the R-clip and key barrel to prevent accidental removal.

The locking pin acts as a secondary safety lock and deters unauthorised disconnection.

Post Connection Checks:

- Handle is fully locked and cannot be moved out of lock.
- Receiver is fully seated against the coupler shaft.
- Locking pin + R-clip installed.

- Safety chains crossed and connected, electrical plug and breakaway cable attached.

DO NOT TOW unless handle is locked and the locking pin and R-clip are installed.

Maintenance and Inspection Guide

This maintenance and inspection guide applies to both the Drop-On and Automatic Coupler.

Regular maintenance ensures safe operation and long service life, especially after off road use such as dust, mud, corrugations and water crossings.

Safety First

- Level ground, tow vehicle in park (or in gear for manuals), handbrake on.
- Chock wheels, support drawbar with jockey wheel and/or stands.
- Wear eye protection. Do not heat, weld, or modify coupler components.

Service Intervals

Before each trip

- Coupler, drawbar, and mounting hardware have no cracks, bending or corrosion.
- Pins & R-clips present, straight and secure.
- Safety chains, shackles, electrical plug, and breakaway cable in good condition.
- Engagement faces (pins/receiver/shaft) are clean and dry (no grease).

Every month or 1,000km (shortened after heavy off road use):

- Clean away mud, sand, and grit; dry thoroughly.
- Check main shaft (both couplers) rotates freely but no vertical or side play.
- Inspect nylon bushes for wear.

- Drop-On: Inspect vehicle tow pin; Automatic: Inspect vehicle square nreceiver – both secure and unworn.

After water crossings / heavy dust / beach use:

- Rinse with fresh water, dry completely, re-inspect.

Annually

- Full coupler and uni-joint inspection; replace any worn pins, clips bushes or hardware.

Cleaning and Lubrication Policy

- Cleaning: Soft brush + low pressure water; avoid harsh solvents that can damage nylon. Dry fully.
- Lubrication:
    - **Do not** lubricate external engagement faces such as tow pin, receiver, horizontal shaft, or locking handle. Keep clean and dry.
    - **Uni-joint only:** grease at normal service intervals; wipe away excess
    - **If main shaft is removed, or nylon bushes are replaced**: Apply a light, even coat of grease inside the coupler bore and on the shaft during reassembly; wipe excess. External faces remain dry.

Main Shaft and Nylon Bushes – Check and Adjustment:

Both the Drop-On and Automatic couplers have a central/main shaft running through nylon bushes. This shaft should rotate smoothly with no vertical or lateral play. If you can feel the head move up/down or rattle, adjust as below.

Symptoms of Bush/Nut Looseness:

- Noticeable up/down or side play when you lift/push on the coupler head.
- Rattle or clunk through the coupler during towing or hitching.

- Engagement feels inconsistent even when externally clean and dry.

Tools:

- Correct size spanner/socket for the rear nut.
- Allen key for the grub screw.
- Clean rags.
- Grease only if removing the shaft or replacing bushes.

Procedure – Tighten Main Shaft Nut & Lock Grub Screw:

1. Secure the camper. Ensure access to the rear of the main shaft.
2. Locate the main nut at the rear of the shaft and its grub screw.
3. Loosen the grub screw slightly with the Allen key.
4. Tighten the main nut with a spanner/socket until all free play is eliminated, while the shaft still rotates smoothly in the bushes.
    a. Do not over tighten. Over preload can bind the shaft and damage the bushes.
5. Re-tighten the grub screw against the nut to lock it in and prevent loosening.
6. Function test – Rotate the head and check again for zero play and smooth movement.

If play persists, inspect nylon bushes for wear or ovalisation. Replace bushes if worn, then repeat the adjustment and re-lock the grub screw.

Nylon Bushes – Inspection & Replacement

Inspect:

- Bush ID not ovalised, no cracking, or glazing. Correct clearing to shaft.
- Shaft surface is smooth, free of burrs/scoring that would damage new bushes.

Replace (overview)

1. Camper unhitched and supported; clean the area.
2. Loosen the grub screw and remove the rear main nut and retainers/washers.

3. Withdraw the main shaft carefully.
4. Remove nylon bushes; clean the bore and the shaft.
5. Apply a light coat of grease to the bore and shaft, fit new bushes.
6. Reinsert the shaft, refit washers and main nut; adjust to zero free play with smooth rotation.
7. Lock the grub screw onto the main nut.
8. Wipe away any excess grease; leave external engagement faces dry.

Uni-Joint – Excessive Slack / Movement

If the coupler head exhibits excessive movement slack at the uni-joint (beyond normal articulation), you can take up the slack by tightening the uni-joint dust caps:

Procedure

1. Support the drawbar; ensure safe access to the uni-joint.
2. Using a ¼″ drive ratchet (and appropriate socket/bit), tighten the dust caps carefully and evenly.
3. Check articulation remains smooth, without binding.
4. Do not overtighten — overtightening can restrict movement and increase wear.

If slack persists after adjustment, or if movement feels notchy/binding, stop and have the uni-joint inspected for bush or cap wear and replace components as needed.

Coupler Specific Checks

Drop-On Coupler

- Rotating head clamps securely on the tow pin; threads clean, no galling.
- Vehicle tow pin is round, smooth, and mounted to spec.
- Locking pin hole round; R-clip retains positively.
- External parts clean/dry.

Automatic Coupler

- Vehicle square receiver firmly mounted; internal faces clean, no burrs.
- Horizontal reverse-on action locks the handle positively.
- Locking pin aligns and inserts without force; R-clip secure.
- External parts clean/dry.

Quick Owner Checklist

- Coupler clean/dry; no cracks or corrosion of concern
- Main shaft: rotates smoothly, no vertical/side play
- Grub screw locked against the tight main nut
- Nylon bushes in good condition (no ovalisation)
- Uni-joint greased; no excessive slack (dust caps set)
- Locking pin & R-clip present and secure
- Vehicle tow pin/receiver sound and firmly mounted
- Safety chains, shackles, electrical plug, breakaway cable OK

Cruisemaster Coupler

Austrack Campers have can be upgraded to the Cruisemaster DO35 off-road coupler, with the option to upgrade to the DO45 for higher towing capacity.

The DO35/DO45 is a fully articulated off-road coupling system designed for safe, quiet, and controlled towing across uneven terrain, steep angles, ruts, and tight manoeuvring. When correctly connected, the coupling provides smooth articulation in all directions, reducing stress on both the tow vehicle and caravan.

Cruisemaster DO35/DO45 Coupler

The DO35/DO45 uses a vertical drop-on tow pin fitted to the vehicle's tow tongue. The caravan's coupling head locates over the pin and automatically locks into place using the internal slide-lock mechanism and red lock button.

Engaging The Coupler

To assist in correct engagement, position the caravan so the coupling is directly above the tow pin. Using the jockey wheel, raise or lower the drawbar until the coupler sits slightly above the pin.

1- **Unlock the Coupler**
   a. Press down on the red lock button
   b. Slide the locking plate rearward
   c. The viewing port should appear clear, indicating the coupler is ready to drop on.

2- **Lower The Coupler Onto The Tow Pin**
   a. Use the jockey wheel to lower slowly
   b. The coupler will self-locate and drop fully onto the tow pin
   c. Press the red button to engage the locking plate forward.

3- **Fit the Check-Lock Dust Cap**
   a. This provides a visual confirmation that the lock is engaged
   b. The cap must fit flush; if it does not, the coupler is not locked.

In some cases, minor misalignment may occur due to terrain or vehicle angle. A small height adjustment or gentle repositioning of the drawbar may be required to allow the coupler to seat fully.

DO NOT TOW Unless:

- The red button is fully raised
- The locking plate is fully forward
- The Check-Lock cap is installed correctly
- Safety Chains, electrical plug, and breakaway cable are connected
- The handbrake is released before driving

Quick Tips

- If engagement stalls, stop and realign so the coupler and tow pin are centred
- On uneven ground, adjust the jockey wheel height to help the coupler drop cleanly
- Keep the tow pin and coupler mouth clean for smooth locking and reduced wear
- Never force the coupler down. If it doesn't drop freely, realign and try again

Unhitching the DO35/DO45

1- Park on level ground where possible
2- Apply the handbrake
3- Chock the caravan wheels
4- Lower the jockey wheel until it supports the drawbar
5- Press the red lock button and slide the locking plate rearward to unlock
6- Raise the caravan until the coupler lifts cleanly off the tow pin
7- Replace the tow pin cover

Maintenance and Inspection Guide

Regular maintenance ensures safe operation and long service life, especially after off-road use such as dust, mud, corrugations, and water crossings.

Safety First

- Park on level ground; tow vehicle in park (or in gear for manuals)
- Apply the handbrake and chock wheels
- Support the drawbar with the jockey wheel or stands
- Do not heat, weld, or modify the coupler components

Service Intervals

Before Each Trip:

- Coupler, drawbar, and mounting hardware show no cracks, bending or corrosion
- Tow pin is clean, smooth, and firmly mounted
- Locking plate and red button move freely
- Safety chains, shackles, electrical plug, and breakaway cable are in good condition
- Tow pin and coupler mouth are clean and lightly lubricated.

Every Month or 1,000 km (shortened after heavy off-road use):

- Clean away mud, sand, and grit; dry thoroughly
- Check the coupling head articulates smoothly with no binding
- Inspect the tow pin for wear, scoring, or corrosion
- Check mounting bolts for correct torque and no elongation of mounting holes
- Inspect the Check-Lock dust cap for damage

After Water Crossings / Heavy Dust / Beach Use:

- Rinse with fresh water
- Dry completely
- Re-inspect the locking mechanism and tow pin

Annually:

- Full inspection by a Cruisemaster-approved service agent
- The internal yoke pivot bolt must not be adjusted by the owner
- Replace worn components as required

Cleaning and Lubrication Policy

Cleaning:

- Use a soft brush and low-pressure water
- Avoid harsh solvents that may damage seals or internal components
- Dry thoroughly before storage or towing

Lubrication:

- Apply a light coat of grease to the tow pin before each trip

- Grease the coupler via the grease nipple at recommended intervals
- Do not over-grease. Excess grease attracts dust and grit, causing premature wear
- Keep the locking plate and red button area clean and dry at all times

Coupler Specific Checks

DO35 / DO45:

- Red button pops up positively when locked
- Locking plate moves smoothly without sticking
- Tow pin is round, smooth, and torqued to specification
- Check-Lock dust cap fits flush
- No excessive play or looseness in the coupling head
- No binding during articulation

Quick Owners Checklist

- Coupler clean and free of debris
- Red button fully raised when locked
- Locking plate fully forward
- Check-Lock dust cap installed
- Tow pin clean, smooth, and lightly greased
- No cracks, corrosion, or loose hardware
- Safety chains, shackles, electrical plug and breakaway cable connected
- Handbrake applied when parked

Jockey wheel

Your Austrack hybrid caravan is supplied with either an **ARK XO750 jockey wheel** or an **AOE JW750 jockey wheel**. Both units are heavy-duty off-road jockey wheels designed to support the caravan during coupling, uncoupling, levelling, and setup on a wide range of ground conditions.

These jockey wheels offer not only standard winding adjustment but also **multiple height adjustment positions on the outer shaft**, allowing the wheel height to be set correctly for different tow vehicles and uneven terrain. This flexibility helps maintain safe working angles and reduces strain on both the jockey wheel and drawbar.

 It is important however, to never move the hybrid when the jockey wheel is extended past the safe moving line on the extension shaft. The safe working load limit reduces past this line, and it may cause the jockey wheel to bend or break under the load.

Operation and Adjustment

The jockey wheel height can be adjusted in two ways:

- **Primary winding adjustment** using the hand crank
- **Secondary height adjustment** via the outer shaft locking system

When setting up, always use the outer shaft adjustment first to achieve the correct height range, then fine-tune the height using the winding mechanism. This ensures the load remains within the jockey wheel's safe operating range.

The **handle is removable** and should be taken off before travel. Store the handle securely inside the hybrid or tow vehicle to prevent loss or vibration damage while driving.

Austrack recommends familiarising yourself with correct operation techniques. ARK provides a helpful demonstration video that applies to both the ARK XO750 and the AOE JW750 jockey wheels: https://www.youtube.com/watch?v=Ibe7zrAs0nc

Safe Operating Limits

It is *critical* that the caravan is **never moved** when the jockey wheel is extended past the **safe moving line** marked on the extension shaft.

Once extended beyond this line:

- The safe working load capacity is reduced

- The risk of bending or structural damage increases
- Failure of the jockey wheel may occur under towing or repositioning loads

Always retract the jockey wheel fully and confirm it is securely locked and clear of the ground before moving the caravan.

Troubleshooting and Owners Checks

(Applies to both ARK XO750 and AOE JW750 models)

Because the AOE JW750 is based on the proven ARK XO750 design, general behaviour and troubleshooting are similar across both units.

Jockey Wheel Feels Hard to Wind

This may be caused by:

- Excessive load on the wheel (use outer shaft adjustment to reduce winding load)
- Uneven or soft ground causing drag
- Dirt, dust, or debris in the winding mechanism

Action:
Reduce load using shaft adjustment, reposition on firmer ground if possible, and inspect for dirt buildup.

Jockey Wheel Will Not Hold Height or Slips

This can occur when:

- Locking pins or clamps are not fully engaged
- The shaft is positioned too high beyond its optimal range

Action:
Lower the wheel, re-position the outer shaft, ensure all locking mechanisms are fully engaged, then retighten and test.

Excessive Movement or Wobble

Possible causes include:

- Operating outside the safe extension range
- Wear or loosening of mounting hardware
- Uneven or unstable footing

Action:
Retract the jockey wheel to a safer position, confirm hardware is secure, and avoid soft or sloping ground where possible.

Wheel Does Not Roll Freely

This may be due to:

- Loose stones or debris lodged in the wheel
- Bent components caused by overload or misuse
- Ground conditions unsuitable for rolling movement

Action:
Clear debris, avoid pushing the caravan with the jockey wheel under heavy load, and use the tow vehicle where repositioning is required.

IMPORTANT NOTICE

The jockey wheel is designed to **support and position the caravan only**. It must not be used to tow, drag, or manoeuvre the caravan over long distances or rough terrain.

Any signs of bending, cracking, excessive play, or mechanical failure should result in the jockey wheel being removed from service and inspected by a qualified technician.

Trailer Breakaway

Your Austrack hybrid caravan is fitted with a **trailer breakaway system**, which is a critical safety feature designed to automatically apply the caravan's brakes in the unlikely event of an accidental disconnection from the tow vehicle.

The breakaway system consists of a switch mounted on the drawbar and a **steel activation cable** with a removable pin. Under normal towing conditions, the pin remains inserted in the switch and the system remains inactive.

Do not use the breakaway system as an alternative to the handbrake or remove the pin from the breakaway switch as an anti-theft measure, this will cause a rapid discharge of your house batteries. This will leave your hybrid without power and can cause damage to the batteries.

How The Breakaway System Works

The steel breakaway cable attached to the drawbar switch must be connected to a **solid, non-detachable part of the tow vehicle**, such as a chassis-mounted recovery point or designated breakaway attachment point.

In the event the caravan becomes separated from the tow vehicle:

- The breakaway cable is pulled tight
- The pin is removed from the drawbar-mounted switch
- The caravan brakes are immediately activated

Once activated, the brakes will remain **fully applied** for as long as:

- The breakaway pin remains out of the switch, and
- There is sufficient power available in the breakaway battery system

This action significantly reduces the risk of an uncontrolled trailer movement following a disconnection.

Correct Attachment of the Breakaway Cable

It is essential that the breakaway cable is attached correctly every time you tow.

- **Do not attach the cable to the tow bar**, hitch, or safety chains
- Attach the cable directly to the **tow vehicle itself**

This ensures the breakaway system will still function if the tow coupling or tow bar assembly were ever to fail or separate from the vehicle.

The cable should have enough slack to allow full turning movements without pulling the pin during normal driving, but not so much slack that it would delay activation in the event of a separation.

Breakaway Battery and Power Supply

The breakaway system is powered by a **dedicated breakaway battery**, which is typically located under a seat inside the hybrid caravan. This battery is designed to supply sufficient power to the braking system to keep the brakes applied for **a minimum of 15 minutes**, as required by safety regulations.

The breakaway battery is automatically charged from the caravan's main (house) battery system. Under normal conditions, this means the system remains charged and ready whenever the caravan batteries are healthy.

Breakaway Control Box and Testing

The breakaway control box includes indicator lights and a test function to confirm correct operation.

- A **charging indicator light** should be visible when the system is receiving power
- Pressing the **test button** should result in a **green indicator light**, confirming normal operation

If any light other than green is displayed during testing, or if the system does not appear to be charging correctly, **do not tow until the system has been inspected**. In this case, contact the Austrack Service Department for further advice.

Important Safety Notes

- Always check the breakaway cable attachment as part of your pre-departure checks
- Never tow with the breakaway pin removed
- Do not allow the cable to drag on the ground or wrap around the coupling
- Do not rely on safety chains as a substitute for the breakaway system

The breakaway system is a **legal and safety-critical component** of your caravan's braking system and must be kept in proper working order at all times.

Handbrake

The handbrake on your Austrack hybrid caravan operates via a **mechanical cable system** that engages the trailer braking assembly. When the handbrake is applied, tension in the cable pulls on the brake actuator attached to the backing plate, forcing the primary and secondary brake shoes to spread outward until they contact the inside surface of the brake drum.

This mechanical action locks the wheels and helps prevent the caravan from rolling when stationary. Correct adjustment of the handbrake system is essential to ensure it operates effectively and safely.

It is very important to always use wheel chocks and levelling ramps, **do not** rely solely on the handbrake even if on a level surface.

Handbrake Adjustment and Operation

For correct operation, the handbrake cable must be adjusted so that sufficient braking force is applied without causing constant brake drag.

As a general guide:

- When the hybrid is **unloaded**, the handbrake lever should engage firmly at approximately **one-third of its total travel**
- Once the hybrid is **fully loaded**, the handbrake should be tested again and adjusted if required

A handbrake that is not adjusted tightly enough may still allow the caravan to move even when the handbrake is fully raised. This can create a serious safety risk, particularly on slight slopes or uneven ground.

Use of Wheel Chocks and Levelling Equipment

It is very important to understand that the handbrake is **not intended to be the sole means of securing the caravan** when stationary.

Austrack strongly recommends:

- Always using **wheel chocks** when parked
- Using **levelling ramps** as required
- Never relying solely on the handbrake, even on level ground

This is especially important during setup, hitching, unhitching, or when the caravan is unattended.

Adjusting the Handbrake

The handbrake adjustment mechanism is located on the **handbrake cable at the drawbar**.

To tighten the handbrake:

1. Locate the cable adjuster on the drawbar
2. Loosen the locking nut
3. Turn the adjuster wheel **clockwise** to increase cable tension
4. Re-tighten the locking nut once the desired adjustment is achieved

After adjustment, always test the handbrake function by attempting to move the caravan slightly and confirming that the wheels remain firmly locked.

Important Adjustment Warnings

Over-tightening the handbrake can be just as harmful as insufficient adjustment.

An over-tightened handbrake may:

- Cause the brake shoes to drag continuously inside the drum
- Generate excessive heat
- Lead to premature wear or permanent damage to braking components

If correct adjustment cannot be achieved, or if braking performance feels inconsistent, the system should be inspected by an authorised service technician.

IMPORTANT NOTICE

The handbrake forms part of the caravan's **primary safety system** and must be kept correctly adjusted and in good working order. Regular inspection as part of your pre-departure and setup routine will help ensure reliable operation and towing safety.

Anderson plug

Austrack Hard Floor camper trailers are fitted with an **Anderson plug connection at the drawbar**, providing a heavy-duty electrical link between the tow vehicle and the camper's battery system during travel. This connection allows power from the tow vehicle to be supplied to the camper while the engine is running.

Depending on model and build period, Hard Floor campers may be fitted with **one of two different charging configurations**. It is important that owners understand which system is installed in their camper, as operation and charging behaviour differs between setups.

Configuration 1 – Direct Battery Charging (No Rengoy)

Some earlier Hard Floor camper trailers were supplied with a **direct vehicle-to-battery charging arrangement**, with:

- The Anderson plug wired directly to the camper battery system
- No DC/DC charger installed
- A **PROJECTA AC battery charger** used only for 240 V mains charging

In this configuration:

- DC charging relies on the tow vehicle and cabling only
- Charging performance may vary based on vehicle type, wiring length, and alternator behaviour
- The system does not actively regulate charge voltage while driving

This setup was standard for its time and functions as designed within its limits.

Configuration 2 – DC/DC Charging System (RENOGY MODELS)

Later Hard Floor models may be fitted with a **RENOGY DC/DC charging system**, similar to Austrack Hybrid electrical systems but **without integrated solar regulation**.

In this configuration:

- The Anderson plug feeds into the **DC/DC charger**
- The DC/DC charger regulates voltage and current from the tow vehicle
- Battery charging is controlled and optimised while driving

This setup provides improved charging performance across a wider range of driving conditions.

Purpose of the Anderson Plug Connection

On all Hard Floor camper trailers, the Anderson plug is intended **only for tow vehicle alternator or starter battery voltage input** while the engine is running.

Its purpose is to:

- Supply charging power from the tow vehicle to the camper
- Support battery charging during travel

The Anderson plug is **not designed for solar input**. Solar panels — whether regulated or unregulated — must only be connected via the camper's designated solar input (where fitted).

Ignition Trigger Wire

Hard Floor campers fitted with a DC/DC charger incorporate **automatic voltage sensing and protection** within the charging system.

This protection:

- Prevents the camper battery system from drawing power when the vehicle is not charging
- Helps avoid discharge of the tow vehicle's starter battery
- Ensures charging occurs only under safe conditions

On some models, an **ignition trigger wire** may be present but not connected as standard. This allows flexibility to suit different tow vehicle electrical systems.

Where required, ignition trigger wiring must be connected by a **qualified auto electrician** to an ignition-controlled circuit in the tow vehicle.

Circuit Protection

Where applicable, a **dedicated circuit breaker or fuse** is installed in the charging circuit to protect against electrical overloads or faults. The location of this protection device varies depending on model and electrical layout.

Owners should familiarise themselves with the protection device location specific to their camper.

Important Usage Notes

When using the Anderson plug connection:

- Ensure the plug is fully seated and secured before travel
- Do **not** connect solar panels to the Anderson plug
- Regularly inspect the plug and cables for damage, wear, or corrosion
- Ensure all wiring modifications are carried out by qualified personnel only

If charging performance appears inconsistent or ceases while driving, the system should be inspected by a qualified technician.

IMPORTANT NOTES

The Anderson plug and charging system form a critical part of the camper's electrical system. Any modification, repair, or rewiring must be carried out by a **licensed auto electrician or authorised service provider**.

Incorrect wiring or unauthorised modifications may compromise safety and affect warranty coverage.

Trailer Plug Wiring

Austrack hybrid caravans are fitted **as standard** with a **7-pin flat trailer plug**, which provides the required electrical connections between the tow vehicle and the caravan for lighting and auxiliary trailer functions.

The 7-pin flat plug configuration used is the industry-standard arrangement and is suitable for the majority of modern tow vehicles. Correct connection of the trailer plug is essential to ensure that all mandatory lighting and safety functions operate correctly while towing.

Wiring Configuration

This Owners Manual includes an image showing the **standard wiring diagram for the 7-pin flat trailer plug**. Owners should refer to this diagram when checking plug function, troubleshooting lighting issues, or confirming compatibility with a tow vehicle.

Always rely on the wiring diagram provided in this manual when identifying pin functions or diagnosing faults. Incorrect assumptions or improper wiring can result in malfunctioning lights, electrical damage, or non-compliance with road regulations.

Pin No.	Circuit	Colour
1	Left-Hand Turn	Yellow
2	Reversing Signal	Black
3	Earth Return	White
4	Right-Hand Turn	Green
5	Service Brakes	Blue
6	Stop Lamps	Red
7	Rear Lamps, Clearance & Side Marker Lamps	Brown

Cable Entry View

7 Pin Plug 7 Pin Socket

Alternative Plug Options

While the 7-pin flat plug is supplied as standard, **alternative trailer plug configurations can be fitted by arrangement**, including:

- 7-pin round (small)
- 7-pin round (large)

If a different plug type has been requested at the time of purchase, or if a change is required after delivery, please contact your **local Austrack showroom or the Austrack Service Department** to obtain the correct wiring diagram and discuss suitable options.

Any changes to trailer plug configuration should be carried out by a qualified auto electrician to ensure correct function and compliance with Australian standards.

IMPORTANT NOTES

- Always ensure the trailer plug is fully inserted and securely connected before travel
- Check trailer lights as part of your pre-departure inspection
- Inspect the plug and wiring regularly for damage, corrosion, or loose connections

- Do not force incorrect plug types together using adapters unless properly wired and approved

If any trailer lighting or electrical functions are not operating correctly, refer to the wiring diagram in this manual or seek professional assistance.

Passenger Side

The passenger side of your Austrack camper houses many of the key **external access, living, and convenience features** designed to support day-to-day operation, campsite setup, and outdoor living. Depending on model and layout, this side of the van may include refrigeration, cooking facilities, entry access, shade structures, and annex or enclosure systems.

Components located on the passenger side are intended to be **easily accessible and regularly used**, particularly during setup, meal preparation, and extended stays. Correct operation, routine

inspection, and proper setup of these features are essential to ensure safety, reliability, and long-term durability.

This section of the Owners Manual provides operating guidance, safety information, and owner-safe setup advice for the following passenger-side components fitted to Austrack caravans:

- External Fridge
- External Kitchen
- Main Entry Door
- External Control Panel
- Annex

Each subsection should be read carefully before use, particularly during initial setup and whenever operating conditions change.

External Fridge

To be added

External Kitchen

The external kitchen fitted to your Austrack caravan is designed for regular outdoor use and exposure to a wide range of environmental conditions. Components such as sinks, benches, racks, and storage systems are typically manufactured from **stainless steel, powder-coated metals, and food-grade fittings**, providing durability while maintaining ease of cleaning and hygiene.

Because the external kitchen is often exposed to dust, moisture, grease, heat, and vibration, correct use and regular maintenance are essential to preserve appearance, prevent corrosion, and ensure safe food preparation.

This section outlines care and maintenance guidance for **external sinks, drainage systems, racks, stainless-steel surfaces, and gas cooking appliances** used in Austrack external kitchens.

Sink Use and Care

The external kitchen sink is intended for food preparation, utensil washing, and general campsite use. Correct care helps prevent staining, odours, and drainage issues.

Good sink-use practices include:

- Rinsing the sink after each use to remove food and residue
- Avoiding disposal of excessive food scraps, grease, or fats into the drain
- Using a sink strainer where fitted to prevent debris entering the plumbing

After use, the drain should be flushed with clean water. If the caravan is not being used for an extended period, ensure the sink is clean, free of residue, and fully dry.

Drainage and Sullage Hose

Austrack Hard Floor camper trailers are fitted with an **external kitchen sink** that drains wastewater via a **sullage hose**. Unlike Austrack Hybrid caravans, **Hard Floor camper trailers do not have an onboard grey water tank**.

All wastewater from the external kitchen sink is drained **by gravity** and must be managed by the owner in a responsible and environmentally appropriate manner.

Sullage Hose Operation

The external kitchen sink is connected to a flexible sullage hose designed to direct wastewater away from the camper.

When using the sink:

- Ensure the sullage hose is correctly fitted to the sink outlet
- Check that the hose is free from kinks, twists, or restrictions
- Position the end of the hose so water flows freely under gravity

The sullage hose should never be allowed to discharge wastewater in a way that causes pooling beneath the camper or creates hygiene concerns.

Waste Water Management

Because Hard Floor camper trailers do **not** have a grey water tank:

- Wastewater is **not stored onboard**
- Drainage is continuous while the sink is in use

Austrack recommends:

- Draining wastewater into a **bucket, container, or portable waste tank**
- Emptying wastewater at an **approved disposal point**
- Following caravan park, campground, or local council regulations at all times

Direct discharge onto the ground may not be permitted in some caravan parks or camping areas and should be avoided where restrictions apply.

Responsible Sullage Use

Proper management of sink wastewater helps maintain cleanliness and reduces environmental impact.

Austrack recommends:

- Emptying containers regularly to reduce odours
- Avoiding food scraps, oils, and fats entering the drain
- Using biodegradable dishwashing products where possible

Wastewater containing food or grease can attract insects and animals and should be disposed of appropriately.

IMPORTANT NOTICE

Hard Floor camper trailers rely on **owner-managed sullage control**. Failure to manage wastewater responsibly may result in environmental harm or breaches of campsite regulations.

Always comply with local rules and dispose of wastewater at approved locations.

Stainless Steel Surface Care

Many external kitchen components, including sinks, benches, splashbacks, and racks, are manufactured from stainless steel. While stainless steel is corrosion-resistant, it is **not maintenance-free**, particularly in outdoor or coastal environments.

To maintain stainless steel surfaces:

- Clean regularly using warm water and mild detergent
- Wipe in the direction of the grain where visible
- Rinse thoroughly and dry with a soft cloth to prevent water spotting

Avoid leaving salt residue, acidic substances, or food spills on surfaces for extended periods, as these may cause staining or corrosion over time.

Cleaning Warnings

Stainless steel surfaces must **not** be cleaned using:

- Abrasive pads or scourers
- Steel wool
- Chlorine-based cleaners
- Highly acidic or harsh degreasers

These products can damage the surface and compromise corrosion resistance.

Racks, Trays, and Storage Components

External kitchen racks and storage systems are designed to support cookware, utensils, and food preparation items. These components are exposed to movement, vibration, and weather during use and travel.

Best practice includes:

- Cleaning racks regularly to remove grease, dust, and residue
- Ensuring all components are dry before packing away
- Inspecting mounting points and fasteners periodically

Before travel, all items should be removed or securely stored to prevent movement, noise, or damage.

General Cleaning and Hygiene

Outdoor cooking environments require consistent hygiene practices to ensure safe food handling.

Recommended hygiene practices include:

- Cleaning all food-contact surfaces before and after use
- Using food-safe cleaning products
- Drying surfaces thoroughly before closing or storing

In dusty, sandy, or coastal environments, increased cleaning frequency may be required.

After Use and Pack Down

Before closing or packing away the external kitchen:

- Ensure sinks, benches, and racks are clean and dry

- Remove all food scraps and waste
- Confirm the sullage hose is correctly connected or stowed
- Secure all movable components

If the caravan is to be stored for an extended period, an additional clean is recommended to prevent odours, staining, or corrosion.

Operating External Gas Appliances (Bayonet Connection)

Austrack Hybrid Campers and Caravans are fitted with a rear-mounted (front mounted for some models) bayonet gas outlet, allowing connection of approved external gas appliances. These may include the supplied external 4-burner gas stove or, alternatively, a compatible external gas BBQ.

All appliances connected to the bayonet fitting must be designed for LPG use, fitted with an approved bayonet hose, and intended for outdoor use only.

Gas appliances must never be operated inside the camper, caravan, or any enclosed space.

Connecting an External Stove or BBQ

Before connecting any appliance, ensure it is positioned on a stable, non-combustible surface and all controls are turned off. Correct connection is essential to ensure a secure gas seal and safe operation.

To connect an external stove or BBQ:

- Confirm all appliance control knobs are in the OFF position
- Connect the appliance hose to the bayonet fitting, ensuring it locks securely into place
- Open the gas cylinder valve at the front of the camper

Lighting the Appliance

If the gas system has not been used recently, air may be present in the gas lines, which can result in a short delay before ignition.

To light an external stove or BBQ:

- Turn the selected burner control knob to the HIGH position
- Press and hold the control knob in
- While holding the knob, press the ignition switch
- Initial ignition may take up to two minutes
- Once lit, continue holding the knob in for approximately 5 seconds

If the burner does not remain lit, turn it off, wait one minute, and try again.

Gas Flow Tip

If gas appliances have not been used for a period of time, Austrack recommends lighting an external stove or BBQ first before operating the hot water system. This helps draw gas through the lines more efficiently and can reduce ignition time.

Safe Operation

External gas appliances produce high heat and must be used with care at all times.

When operating an external stove or BBQ:

- Use only in open, well ventilated outdoor areas
- Keep flammable materials well clear of burners
- Never leave the appliance unattended while in use
- Keep children and pets well away from the cooking area

- Do not modify the appliance or use unauthorised accessories

After Use

Correct shutdown and storage of external gas appliances helps prevent damage and injury

After cooking:

- Turn all burner controls to OFF
- Turn off the gas cylinder at the front of the camper
- Allow the appliance to cool completely
- Disconnect the bayonet fitting only when cool
- Store the appliance securely before travel

Troubleshooting – External 4 Burner Stove

This section applies only to external gas stove tops connected to the Austrack gas system via the rear bayonet fitting. The information below is intended to assist with common operating issues using owner-safe checks only.

If the issue cannot be resolved using the steps provided, discontinue use and contact an authorised service agent.

Stove Top Will Not Ignite

If the stove top does not ignite when following the correct lighting procedure, the most common causes are air in the gas line or restricted gas flow.

Check the following before attempting to relight:

- Ensure the gas cylinder valve is fully open
- Confirm the bayonet fitting is fully inserted and locked
- Check that the stove control knob is turned to the HIGH position during ignition

- If the stove has not been used recently, allow time for gas to flow through the system (initial ignition may take up to two minutes)

If ignition is unsuccessful, turn the control knob off, wait at least one minute, and try again.

Burner Lights but Will Not Stay Alight

If the burner ignites but goes out when the control knob is released, the flame failure safety device may not have had sufficient time to activate.

Check the following:

- Hold the control knob in for longer after ignition (approximately 5 seconds)
- Ensure the burner is fully lit before releasing the knob
- If the burner goes out, wait one minute before attempting to relight

Uneven or Yellow Flame

A correctly operating stove top burner should produce a steady blue flame. A yellow, uneven, or weak flame may indicate blocked burner ports or incorrectly positioned components.

Check the following once the stove top has cooled:

- Ensure burner heads and caps are seated correctly
- Inspect burner ports for food residue, dirt, or debris
- Clean burner components as required and refit correctly

Do not continue using the stove top if abnormal flame behaviour persists.

Ignition Spark Present but Burner Does Not Light

If the ignitor produces a spark but the burner does not ignite, gas may not be reaching the burner correctly.

Check the following:

- Confirm the gas cylinder is turned on
- Ensure the bayonet fitting is secure and locked
- Check that no appliance isolation valves have been closed
- Verify appliance controls are set correctly during ignition

Smell of Gas While Using the Stove Top

If a gas smell is detected at any time during stove top operation, this may indicate a gas leak or unburnt gas.

If you smell gas:

- Turn off all stove control knobs immediately
- Turn off the gas supply at the cylinder
- Do not attempt to relight the stove
- Do not use matches, lighters, or electrical switches
- Ventilate the area if possible
- Have the stove and gas system inspected by an authorised service agent

⚠️ Never attempt to check for gas leaks using a naked flame

Professional Servicing

If the stove top continues to malfunction after performing the checks above, do not attempt repairs or adjustments yourself. Stove top servicing and gas system work must only be carried out by qualified personnel. Please visit your local AOE RV Service Centre for repairs.

IMPORTANT NOTICE

The external kitchen is designed for general outdoor food preparation and support of cooking activities. Proper care, responsible water management, and regular cleaning will maintain performance, appearance, and hygiene.

Damage caused by misuse, lack of cleaning, or inappropriate cleaning products may not be covered under warranty.

Main Entry Door

Austrack Hard Floor camper trailers are fitted with a **custom-designed Austrack entry door**, specifically engineered to suit the folding roof and body design of Hard Floor campers. This door system is unique to Austrack and differs from entry doors used on Hybrid caravans.

The entry door **can only be opened once the camper roof has been fully folded over and secured**. This is a deliberate design feature and forms part of the camper's structural integrity and weather-sealing system.

Entry Door Interlock with Roof and Gas Strut

When the camper roof is in the **closed or operating position**, a **gas strut physically obstructs the entry door**, preventing it from opening.

- The gas strut sits directly in the path of the door
- This makes it **physically impossible** to open the door while the roof is closed
- This is **normal operation** and **not a fault**

The roof must be **fully folded over** before the gas strut moves clear of the doorway, allowing the entry door to be operated correctly.

⚠️ **Do not attempt to force the door open while the roof is closed**, as damage may occur.

Door Locking System

All Hard Floor entry doors use a **triangle-shaped compression lock**, designed to pull the door tightly against the camper body when locked.

The compression lock:

- Is operated using a **specialised key**

- Provides a secure and weather-tight seal
- Must be fully disengaged before opening the door

Door Configuration 1 – Downward Folding Door with Integrated Step

Some Hard Floor models are fitted with a door that **folds downward**, incorporating a **built-in fold-out step**.

Opening the Door

1. Confirm the **camper roof is fully folded over and secured**
2. Unlock the **triangle-shaped compression lock** using the supplied key
3. From above the door, place your hand inside and ensure the compression lock is **fully disengaged from behind the camper body**
4. Allow the door to **fold downward**
5. Fold out the **integrated step** from inside the door to provide stable entry

Door Configuration 2 – Side Opening Door with No Integrated Step

Other Hard Floor models are fitted with a door that **opens to the left-hand side** and does not include a built-in step.

Opening the Door

1. Confirm the **camper roof is fully folded over**
2. Unlock the **triangle-shaped compression lock** using the supplied key
3. Reach in from over the top of the door and ensure the compression lock is **fully disengaged**
4. Swing the door **open toward the left-hand side**

Important Roof Closing Requirement (Side Opening Door Models)

⚠️ **For side-opening door configurations, the door must be fully closed and locked before closing the roof.**

Failure to close the door before lowering the roof may result in:

- The **gas strut contacting the door**
- Damage to the **entry door**
- Damage to the **gas strut or roof mechanism**

This damage can occur quickly and may not be covered under warranty.

Always visually confirm the door is:

- Fully closed
- Correctly seated
- Properly locked

before beginning roof-closing procedures.

Fold Out Entry Step (Side Opening Door Models)

Models without a built-in door step are supplied with a **separate fold-out entry step**.

- The step is located **underneath the camper entry**
- Fold the step down fully before entering
- Ensure the step is stable before use
- Fold and secure the step before closing the door or travelling

Closing and Securing the Entry Door

When closing the entry door:

1. Return the door to its closed position
2. Ensure the compression lock aligns correctly with the camper body
3. Lock the door using the **triangle-shaped compression lock**
4. Confirm the door is flush, sealed, and secure

Always ensure the door is **fully closed and locked before travel**.

IMPORTANT NOTICES

Important Notices

- The entry door **cannot be opened while the roof is closed** due to gas strut obstruction
- The door **must be closed before the roof is lowered**
- Never force the door against the gas strut or roof components
- Always ensure locks and steps are retracted before travel

Damage caused by incorrect operation or forcing components may not be covered under warranty.

External Control Panel

Austrack Hard Floor camper trailers are fitted with an **external control panel**, providing convenient access to key electrical and system functions during setup and use. This control panel is located **inside the external kitchen compartment**, mounted on a panel adjacent to the kitchen for easy reach.

The layout and components of the external control panel vary depending on whether the camper is fitted with a **RENOGY electrical system** or a **non-RENOGY electrical system**.

Non-RENOGY Control Panel Configuration

Hard Floor camper trailers **not fitted with a RENOGY system** use an external control panel consisting of **blue, round, push-style switches**.

These switches are used to control various camper functions, which may include:

- Main 12 V system power
- Water pump operation
- Lighting circuits
- Accessory and socket power
- Other model-specific electrical functions

Each switch is clearly labelled for its intended function.

Operation is simple:

- Press the switch inwards for it to light up blue, indicating it is on.
- Press again to turn the switch off.

These switches provide simple, reliable manual control without the need for screens or software interfaces.

RENOGY Control Panel Configuration

Hard Floor camper trailers fitted with a **RENOGY electrical system** use a different external control panel setup.

The external control panel on RENOGY-equipped models includes:

- A **RENOGY ONE Core display screen**
- A **physical inverter on/off switch**
- A **blue push-button used to power the RENOGY system on and off**

These components are all mounted **together in the external kitchen compartment**.

RENOGY System Power Button

The **blue push-button** controls overall RENOGY system power:

- Press to turn the RENOGY system **on**
- Press again to turn the system **off**

When the system is off, the Core screen will be inactive and system functions will be unavailable.

Inverter Switch (RENOGY MODELS)

A **dedicated physical inverter switch** is provided on the external control panel.

This switch:

- Turns the inverter **on or off**
- Allows manual control of inverter operation
- Should be turned **off when the inverter is not required**

The inverter should not be left on unnecessarily, particularly when operating off-grid.

RENOGY ONE Core Screen

The **RENOGY ONE Core screen** provides system information such as:

- Battery status
- Charging inputs
- System warnings and data

This screen is informational and works in conjunction with the RENOGY system power button and inverter switch.

Note: The **RENOGY Vision control panel with physical buttons** is located **inside the camper**, not on the external control panel.

General Usage Notes

For all Hard Floor camper trailers:

- Ensure required systems are switched **off** before travel
- Avoid unnecessary electrical use when operating off-grid
- Do not force switches or buttons

If a system does not operate as expected, refer to the **Troubleshooting Guide** in this manual.

Service and Support

If the external control panel:

- Fails to respond
- Shows intermittent operation
- Has damaged switches or buttons

Austrack recommends contacting AOE RV Service Centre as the primary point of support. If AOE RV Service Centre is not accessible, assistance should be sought from a suitably qualified caravan service technician.

IMPORTANT NOTICE

The external control panel is exposed to frequent use and outdoor conditions. Damage caused by moisture ingress, physical impact, forcing controls, or unauthorised modification may not be covered under warranty.

Always ensure the external kitchen compartment is closed properly when not in use.

Annex

Austrack Hard Floor camper trailers are supplied with a **full annex system**, designed to significantly increase usable sheltered space at camp. When correctly set up, the annex provides protection from weather, additional living area, and the ability to configure privacy zones such as the ensuite.

While the annex becomes much easier with familiarity, it involves multiple components, specific setup order, and correct tensioning. Rushing the process or skipping steps can result in poor fitment, excessive fabric stress, or damage. For this reason, Austrack provides both a **printed annex diagram** and a **dedicated setup video** to guide owners through correct installation.

Annex Diagram – Primary Reference

Austrack supplies a **printed annex setup diagram**, which should always be used as the first reference point before beginning setup. This diagram is typically located on the **inside of the second external compartment door**, making it easily accessible at camp.

The diagram visually identifies component placement and assembly order and is intended to work alongside the physical annex components. It uses clear visual references so owners can methodically follow the correct sequence.

The annex diagram:

- Uses **colour coding and numbered component references**
- Identifies correct pole positioning and orientation
- Matches the annex supplied with your specific camper

Important clarification:
While the diagram itself is colour coded, the **annex poles are not colour coded**.
The poles are **numbered only**, and these numbers must be matched to the diagram references during setup.

Austrack strongly recommends reviewing the diagram in full before beginning, particularly if the annex has not been used recently.

Preparing for Annex Setup

Before starting annex setup, it is important that the camper itself is fully prepared. Annex installation should always follow completion of the main camper setup to ensure correct alignment and tension.

Austrack recommends completing the following before attaching the annex:

- Fully set up the camper and roof
- Confirm the camper is level and stabilised
- Ensure sufficient clear space around the camper
- Select **firm, level ground** for annex installation

Laying Out Annex Components

Taking time to lay out components correctly makes annex erection far simpler and reduces setup errors.

To assist with this process:

- Lay all **annex poles on the ground** in the area where the annex will sit
- Arrange the poles **in the approximate positions shown on the annex diagram**
- Match pole **numbers** to the corresponding diagram references

Laying poles out on the ground beforehand allows the setup to progress smoothly and avoids confusion once tensioning begins.

Recommended Setup Order

The annex has been designed to be erected in a logical sequence. Attempting to tension components too early or skipping steps can prevent the annex from aligning correctly.

Austrack recommends the following general setup order:

1. Attach the **annex roof section** to the camper
2. Begin assembly from the **front corner of the camper**

3. Work progressively **from front to back**
4. Install poles and walls according to the diagram
5. Fit spreader bars **only once the structure is fully erected**

Spreader bars are a finishing step and should not be installed until the main annex body is aligned and standing correctly.

Annex Roof – Attachment and Removal

The annex roof is a critical component of the overall structure and must be handled carefully during both setup and pack-down.

The annex roof:

- **Must be installed during setup** to correctly support the structure
- **Must be completely removed during pack-down**

⚠️ **Critical requirement:**
The annex roof **must be detached before folding the camper**.
The roof will **not fit** if left attached and attempting to fold the camper with the annex roof still in place may cause damage.

Before closing the camper roof, always ensure the annex roof is:

- Fully detached
- Folded correctly
- Stored with the rest of the annex components

Annex Walls – Optional vs Required

The annex system is designed to be flexible and modular, allowing owners to adjust the configuration to suit conditions.

In normal use:

- Installing **all annex walls is not mandatory**
- Walls may be added or removed based on weather, airflow, and privacy requirements

Ensuite Wall (Mandatory for Ensuite Use)

If the annex ensuite is to be used, **one specific wall must be installed**.

This wall:

- Attaches to the **side of the annex closest to the front of the camper**
- Provides privacy and splash protection
- Is **required** for ensuite operation

The ensuite should **not be used without this wall installed**.

Annex Height Adjustment and Water Run Off

Each annex corner can be adjusted independently, allowing the structure to adapt to weather conditions.

In wet weather or during heavy rain:

- Annex corners should be **lowered slightly**
- This creates a **run-off angle** for water
- Prevents pooling on the annex roof
- Reduces stress on fabric, seams, and poles

Failing to create adequate run-off may allow water to accumulate, increasing the risk of damage.

Securing the Annex

Regardless of weather conditions, **all annexes must be secured using guy ropes**. Guy ropes are a structural necessity and not optional accessories.

Guy ropes:

- Stabilise the annex structure
- Reduce movement during wind
- Protect poles and attachment points from excessive load

Austrack recommends:

- Installing guy ropes as soon as the annex is erected
- Tensioning evenly on all sides
- Rechecking and adjusting after wind or rain

Final Adjustment and Tensioning

Correct tensioning should only be performed once the annex structure is fully assembled.

When completing final adjustments:

- Do not fully tighten poles until the entire annex body is erected
- Over-tensioning early can cause misalignment
- Spreader bars must be installed **last** to tension the roof correctly

Due to the height required during annex setup, the use of a **step ladder** is strongly recommended, unless you have arms that are mysteriously longer than average.

Packing Away the Annex

All annex components are folded and stored **under the table**, across the floor of the camper.

Packing the annex away correctly is essential. Storage space is limited and the components are designed to fit only when folded and placed in the correct sequence.

Austrack strongly recommends:

- Folding annex components the **same way every time**
- **Taking photos during pack-down** to create a visual reference
- Using these photos for future setups and pack-downs

Improper folding or incorrect storage order may prevent the camper from closing correctly.

IMPORTANT NOTICES

- The annex roof **must be removed before folding the camper**
- Annex poles are **numbered, not colour coded**
- Spreader bars must be installed last
- Guy ropes must always be used
- Annex corners should be dropped during rain
- Incorrect setup or pack-down may result in damage not covered under warranty

Always refer to the **annex diagram** and **Austrack Academy setup video** before first use.

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Rear of the Camper

The rear of your Austrack Hard Floor camper trailer is engineered to support essential storage, access, recovery, and rear-mounted functions, while maintaining structural integrity, correct weight distribution, and safe handling during both on-road and off-road travel. The design and components fitted to the rear of the camper are **model-specific** and are determined by the camper's construction, rear layout, and intended use.

Depending on the Austrack Hard Floor model, the rear assembly may incorporate features such as a rear-mounted spare tyre, integrated recovery points, fold-down rear bar systems, or model-specific rear slide-out components. These features are not optional add-ons, but form part of the camper's engineered design and structural requirements.

Because rear-mounted components influence access, weight balance, and towing dynamics, owners must familiarise themselves with the specific rear configuration fitted to their camper. Understanding how each component is intended to be used, along with its limitations, is essential for safe recovery operations, correct setup, and long-term durability.

This section of the Owners Manual provides operating guidance, safety information, and owner-level inspection advice for the following rear-mounted components, where fitted to applicable Austrack Hard Floor camper trailer models:

- Spare Tyre
- Recovery Points
- Rear Bar Fold-Down Assemblies (model-dependent)
- Rear Slide-Out Systems (Savannah X models only)

Only the components applicable to your specific model will be present. Each relevant subsection should be read carefully before use.

Spare Tyre

All Austrack Hard Floor camper trailers are fitted with one or more **rear-mounted spare tyres**, incorporated into the rear structure or rear fold assembly of the camper depending on the specific model. The spare tyre system is an integral part of the camper's design and allows continued operation in the event of tyre damage, wear, or puncture.

The spare tyre supplied with Austrack Hard Floor camper trailers is **identical in wheel and tyre specification to the tyres fitted to the camper axle**. This means the spare is fully compatible in terms of size, load rating, and performance, and is **not limited to emergency or temporary use only**. When fitted, the spare can be used under normal towing conditions and may also be included as part of a regular tyre rotation strategy.

Because spare tyre mounting arrangements vary between Hard Floor models, owners must familiarise themselves with the configuration fitted to their specific camper before attempting removal or refitting.

Functional Specifications

The spare tyre mounting systems used across Austrack Hard Floor camper trailers are designed with durability and off-road reliability in mind. These systems form part of the camper's structural rear components and are engineered to retain the spare tyre securely under touring and off-road conditions.

Across all Hard Floor models, the spare tyre system is designed to:

- Securely retain a **full-size, fully compatible wheel and tyre**
- Withstand vibration and load experienced during on-road and off-road travel
- Allow external access for inspection and removal
- Support the spare wheel only, with **no additional load-carrying capability**

No accessories or additional items should be mounted to the spare tyre system.

Accessing the Spare Tyre – Model Variations

The method for accessing the spare tyre differs depending on the model of Hard Floor camper trailer. These differences are directly related to how each model's rear structure and rear fold system is engineered.

Owners should identify which configuration applies to their camper and follow the appropriate procedure.

Telegraph X and Savannah X Models

On **Telegraph X** and **Savannah X** models, the spare tyre(s) are located behind the **rear bumper section**, which also houses the rear tail lights. Accessing the spare requires this bumper section to be lowered.

To access the spare tyre on these models, the following steps are required:

- Disengage the **over-centre latches** securing the rear bumper section
- Remove the **lynch pins** retaining the bumper assembly
- Carefully and evenly lower the bumper section under control

Once lowered, the spare tyre(s) are fully accessible.

Model-specific notes:

- **Telegraph X** models are fitted with **one spare tyre**
- **Savannah X** models are fitted with **two spare tyres**

Always support the bumper section during lowering and refitting to prevent injury or accidental damage.

Plenty X Models

The **Plenty X** range has different spare tyre arrangements depending on build generation.

Plenty X – Old Shape

- Fitted with **two rear-mounted spare tyres**
- Both spare tyres are externally accessible
- No rear bumper or bar removal is required

Plenty X – New Shape

- Fitted with **one rear-mounted spare tyre**
- The spare tyre is externally accessible

- No rear bumper or bar removal is required

On **both versions** of the Plenty X, the spare tyre **cannot be removed while the rear fold system is lowered and resting on the tyre**. The rear fold must be returned to its normal travel position before spare tyre removal is possible.

Telegraph LT and Plenty LT Models

The **Telegraph LT** and **Plenty LT** models use a different mounting arrangement.

These models are fitted with:

- A **single rear-mounted spare tyre**
- A **number plate bracket mounted through the centre of the spare wheel**

To remove the spare tyre on these models:

- The **number plate bracket must be removed first**
- The spare wheel retaining hardware can then be removed

After refitting the spare tyre, the number plate bracket must be correctly reinstalled before travel.

Safety During Removal and Refitting

Spare tyres, wheels, and associated mounting components are heavy and require controlled handling.

When removing or refitting a spare tyre:

- Maintain control of the wheel at all times
- Use correct lifting technique
- Avoid placing hands or feet beneath unsupported components

If uncertain or working alone, assistance should be sought.

Pre-Travel Inspection

As part of routine pre-departure inspections, the spare tyre and its mounting system should be checked to ensure continued safe operation.

Owners should verify that:

- All mounting hardware is secure and correctly tightened
- There is no visible cracking, bending, or deformation
- The spare tyre is inflated to the correct pressure
- There is no excessive corrosion, looseness, or unusual movement

Any issues should be rectified before towing.

Maintenance and Care

Regular inspection and basic maintenance of the spare tyre mounting system will help ensure reliability over the life of the camper.

Austrack recommends:

- Inspecting mounts and fasteners regularly, particularly after off-road use
- Cleaning mounting points to remove dust, mud, and road debris
- Checking that rear fold or bumper mechanisms operate smoothly
- Lightly lubricating latch and hinge points where fitted

If bending, cracking, or persistent movement of the spare tyre or mounting system is observed, the camper should be inspected before further travel.

Troubleshooting

Spare tyre difficult to remove or refit

This may be caused by corrosion, overtightened fasteners, or the rear fold or bumper assembly not being fully returned to the correct position.

Action:
Inspect and clean components. Do not force removal.

Rear bumper section difficult to lower or raise

This may be caused by debris in latch or pivot areas or the camper being parked on uneven ground.

Action:
Clean latch areas and reposition the camper on level ground before attempting again.

Excessive vibration or movement in spare tyre

This may indicate loose mounting hardware or wear in mounting points.

Action:
Stop towing and inspect before continuing travel.

SAFETY NOTICE

Rear structures and spare tyre mounting systems must **not** be used as:

- Recovery points
- Jacking points
- Load-bearing supports beyond the spare tyre(s) fitted

Unauthorised modification or misuse may compromise the structural integrity and safety of the camper and may not be covered under warranty.

Rear Bar

Some Austrack Hard Floor camper trailers are fitted with a **fold-down rear bar or rear fold support system**, incorporated as part of the camper's engineered rear structure. The purpose, operation, and necessity of this rear assembly vary by model and are determined by the camper's layout and rear-mounted features.

It is important to note that **not all Hard Floor models use the rear bar for the same purpose**, and **not all models have a rear bed**. Owners must familiarise themselves with the specific configuration fitted to their camper to ensure correct operation and avoid unnecessary or incorrect use.

Purpose and Function

Depending on the model, the rear bar or rear fold system may be used to:

- Support a **rear slide-out bed** (model-specific)
- Allow access to **rear-mounted components**, such as spare tyres
- Permit controlled lowering of rear structural sections for setup or maintenance
- Facilitate inspection or servicing of rear assemblies

The rear bar is a **structural component**, not an accessory, and must only be used as intended for the specific model to which it is fitted.

Model Specific Rear bar and Rear Fold Arrangements

Savannah X Models

The **Savannah X** is the **only Hard Floor model that requires the rear section to be folded down as part of normal setup**.

On Savannah X models:

- The **entire rear section must be folded down**
- The rear bar acts as a **structural support for the rear slide-out bed**
- **Adjustable support arms** are supplied and must be fitted
- These arms assist in holding the rear slide-out bed upright and stable

The rear slide-out bed **must not be deployed** unless:

- The rear section is fully folded down, **and**

- The adjustable support arms are correctly fitted and secured

This configuration is essential for correct bed support and safe operation.

Telegraph X Models

The **Telegraph X** model **does not have a rear bed of any description**.

On Telegraph X models:

- There is **no rear bed** and no bed-support function associated with the rear structure
- Any fold-down rear section is **not part of normal camper setup**
- Folding the rear section down is **only required for maintenance or access**, such as:
    - Accessing rear-mounted spare tyres
    - Inspection or servicing of rear components

The rear section should remain in its normal position unless maintenance access is required.

Plenty X Models

The **Plenty X** model does **not** use a conventional rear bar.

Instead:

- The **spare tyre or spare tyres fold down**
- The spare tyre assembly acts as the **primary structural support for the rear fold-out bed**

Model variations:

- **Older Plenty X** models use **two spare tyres** as bed support
- **Newer Plenty X** models use **a single spare tyre**

For both variants:

- The spare tyre(s) must be correctly folded down and positioned

- The rear fold-out bed must **not** be deployed unless the spare tyre support system is correctly set

Telegraph LT and Plenty LT Models

Both **Telegraph LT** and **Plenty LT** models:

- Do **not** feature a fold-down rear bar
- Do **not** have a rear slide-out or rear fold-out bed
- Do **not** rely on any rear external components for bed support

All bed systems on LT models are **internal** and independent of the rear structure.

No rear bar or rear fold-down operation is required as part of normal setup.

Operating the Rear Bar or Rear Section (Where Fitted)

On models where the rear section is designed to fold down:

1. Park the camper on **level ground**
2. Disengage all **over-centre latches**
3. Remove all **lynch pins or retaining hardware**
4. Support the rear section and lower it **slowly and under control**
5. Fit adjustable support arms where supplied (**Savannah X only**)

To return the rear section to the travel position:

- Reverse the above steps
- Ensure all pins and latches are correctly reinstalled
- Confirm the rear section is fully secured before towing

Limitations and Prohibited use

⚠️ Rear bars, rear fold assemblies, and spare-tyre support systems **must not** be used as:

- Recovery points
- Jacking points
- Seating or standing platforms
- Load-bearing supports beyond their intended design

Misuse may result in structural damage or failure.

Inspection and Maintenance

- Secure latches and pins
- Free and smooth pivot movement
- No visible cracking, bending, or deformation
- Correct condition of adjustable arms (where fitted)

After off-road use, all rear mechanisms should be cleaned and inspected for debris.

IMPORTANT NOTICES

- **Only Savannah X models require** the rear section to be folded down during normal setup
- **Telegraph X models do not have rear beds**
- **Plenty X models use spare tyre fold-down systems**, not a rear bar
- **Telegraph LT and Plenty LT models do not use rear fold or rear bed support systems**

Incorrect operation of rear assemblies or misuse outside intended design may result in damage not covered under warranty.

Recovery Points

Austrack campers are fitted with **dedicated rear recovery points** intended to assist in controlled recovery situations where the camper has become immobilised in sand, mud, or similarly low-traction environments. These recovery points are engineered into the caravan structure to allow recovery loads to be applied in a predictable and managed way when correct recovery techniques are used.

Recovery operations are inherently high-risk activities. The forces involved can be extreme, unpredictable, and potentially dangerous if incorrect attachment points, techniques, or equipment are used. Because of this, recovery should only be attempted by persons with appropriate knowledge and experience, using properly rated recovery equipment and safe recovery methods.

This section explains how the rear recovery points are configured, how they are intended to be used, and—just as importantly—what **must not** be used during recovery operations.

Rear Recovery Point Configuration

Austrack campers are fitted with **two designated rear recovery points**, installed as part of the rear structure of the caravan.

These are positioned:

- One on the **left-hand side** of the rear of the camper
- One on the **right-hand side** of the rear of the camper

The recovery points are designed to work **together**, allowing recovery loads to be shared and distributed evenly across the rear structure rather than being concentrated in a single location.

Mandatory Use of a Bridle or Equaliser Strap

When performing any recovery from the rear of the caravan, **both rear recovery points must always be used together**. This is not optional.

A **bridle strap or equaliser strap** must be fitted between the two rear recovery points before attaching the recovery rope, strap, or winch line. The purpose of the bridle is to divide the recovery load evenly, minimise twisting forces, and reduce the risk of structural damage.

Using a single rear recovery point on its own:

- Introduces uneven loading
- Places torsional stress on the rear structure
- Increases the risk of recovery point or chassis failure

Under no circumstances should only one rear recovery point be used.

50mm Rear Receiver – CRITICAL SAFETY WARNING

Some Austrack camper models are fitted with a **50 mm square receiver** at the rear of the camper. This receiver is provided **for accessory mounting purposes only**.

⚠️ **The rear 50 mm square receiver is NOT a rated recovery point and must NEVER be used for vehicle recovery.**

The rear receiver is **not designed**, **not tested**, and **not rated** to withstand the loads generated during recovery operations. It is not part of the caravan's recovery system.

If used during recovery, the rear receiver or any attached accessory can become a **high-energy flying projectile**, posing a significant risk of **serious injury, death, or damage to vehicles and equipment**.

This is not a hypothetical risk. Recovery failures caused by incorrect attachment points can result in catastrophic outcomes in a matter of seconds.

Approved Rear Recovery Method

If rear recovery of the camper is required, the correct process is as follows:

- Connect a **bridle or equaliser strap** to both rear recovery points
- Ensure all shackles, straps, and recovery gear are correctly rated and in good condition
- Attach the recovery strap, rope, or winch line to the centre of the bridle strap
- Confirm **no attachment is made to the 50 mm rear receiver**
- Clear all persons from the recovery area

- Conduct the recovery in a slow, controlled manner

Dynamic or snatch recoveries should **only** be undertaken by experienced operators who understand the risks and limitations of recovery systems.

Pre-Recovery Inspection

Before attempting any recovery, a visual and physical inspection must be carried out to ensure all components are suitable for use.

Check that:

- Recovery points show no visible bending, cracking, or deformation
- Mounting hardware is secure
- Surrounding structure shows no signs of damage or fatigue
- Recovery straps, bridles, and shackles are undamaged and appropriately rated

If there is any doubt about the condition of a recovery point or attachment, **do not proceed** with the recovery until the system has been assessed.

Post-Recovery Inspection

After a recovery operation has been completed, the rear recovery points and surrounding structure should be inspected again.

Austrack recommends:

- Checking recovery points for distortion or movement
- Inspecting mounting areas for cracks or stress marks
- Checking that fasteners remain tight
- Inspecting all recovery equipment used

Any damage identified should be addressed before further travel.

IMPORTANT SAFETY NOTICE

Recovery operations carry a high risk of serious injury or death when performed incorrectly. Incorrect attachment points, poor technique, or unsuitable equipment can turn recovery gear into dangerous projectiles under load.

Austrack recovery points are designed **only for camper recovery when used correctly and in accordance with this manual**. They must not be modified, overloaded, or used in any way not intended.

If unsure at any stage, do not attempt recovery. Seek assistance from experienced recovery operators or professional recovery services.

50mm Square Hitch Receiver

Some Austrack camper models are fitted with a **50 mm square hitch receiver** at the rear of the camper. This receiver is provided specifically to allow the installation of a **rear-mounted bicycle rack** for transporting bicycles during travel.

The rear hitch receiver is **not a recovery point**, **not a towing point**, and **not designed to accept dynamic loads**. It is intended only for light, static accessory loads and must be used strictly within its designed purpose and rating.

Understanding how this receiver works, how loads are carried, and how misuse can dramatically increase risk is essential for safe operation.

Load Rating and Intended Use

The 50 mm square hitch receiver is rated to a **maximum vertical load of 80 kg**. This figure represents the **absolute maximum combined weight** supported by the receiver and includes:

- The bike rack itself
- All bicycles mounted to the rack
- Any additional carriers, adapters, or accessories attached

Exceeding this rating places excessive stress on the receiver and rear structure, potentially resulting in cracking, deformation, or failure.

The receiver is intended **only** for bicycle rack use. It must **never** be used for:

- Recovery or towing
- Snatch straps or winching
- Cargo trays or load platforms
- Spare wheel mounting

Fuel or water container carriage

How the Receiver Carries Load

The rear hitch receiver supports loads **behind the axle line** of the camper. This means the weight is carried on a lever arm, which magnifies forces acting on the receiver and its mounting points.

Driving conditions that increase these forces include:

- Corrugated roads
- Sharp dips or washouts
- Braking and acceleration
- Uneven off-road terrain

Small increases in weight or distance from the receiver can result in **large increases in stress** on the mounting system. For this reason, staying well within load limits is critical.

Hitch Extenders and Load Derating

On some Austrack camper models, rear geometry, spare tyre placement, rear bar design, or rear fold components may require the use of a **hitch extender** to correctly position a bike rack.

While extenders can improve clearance, they also **increase leverage**, which significantly **reduces the effective load capacity** of the receiver.

Important considerations:

- The further rearward the load is moved, the greater the bending force
- Using a hitch extender **automatically reduces the safe load limit below 80 kg**
- Longer extenders reduce load capacity more than shorter ones

Austrack strongly recommends:

- Using the **shortest possible hitch extender**
- Minimising total rack and bicycle weight
- Avoiding extenders unless absolutely necessary for fitment

ABSOLUTE PROHIBITION ON RECOVERY USE

⚠️ **The 50 mm square hitch receiver must NEVER be used as a recovery point.**

This cannot be overstated.

The rear receiver is **not designed**, **not tested**, and **not rated** for recovery forces. Recovery loads are dynamic, violent, and often several times higher than static accessory loads.

If used during recovery, the rear receiver or any attached accessory can become a **high-energy flying projectile**, posing a significant risk of **serious injury, death, or catastrophic damage to vehicles and equipment**.

This type of failure happens without warning and at extreme speed. People have been seriously injured or killed by components launched during failed recoveries. The presence of a square receiver **does not mean it is safe to recover from**.

No strap, shackle, or clever workaround makes this safe. **Do not do it.**

Bike Rack Selection and Fitment

Because the receiver is designed specifically for bicycle transport, rack choice matters.

When selecting a bike rack:

- Choose a rack **rated for caravan or RV use**
- Avoid racks intended only for passenger vehicles
- Confirm the rack design suits high-vibration environments
- Ensure bicycles are rigidly secured with minimal movement

Bicycles must not sway, bounce, or rotate while travelling, as this rapidly increases load and fatigue on the receiver and mounting hardware.

Pre-Travel Safety Checks

Before travelling with a bike rack installed, always confirm:

- The rack is fully inserted and secured with a rated pin or locking device
- All mounting bolts and clamps are tight
- Total combined load is within allowable limits
- Any hitch extender is correctly installed and in good condition
- Bicycles are firmly restrained with no free movement
- No contact occurs between rack, bikes, rear bar, or caravan body

Checks should be repeated during long trips and after rough road sections.

Maintenance and Inspection

The rear hitch receiver is subjected to constant vibration and environmental exposure. Regular inspection is essential.

Maintenance checks should include:

- Visual inspection for cracking, bending, or distortion
- Ensuring mounting hardware remains tight

- Cleaning accumulated dust, salt, or mud
- Inspecting rack attachment points for wear

Any sign of damage or looseness requires immediate attention.

IMPORTANT NOTICE

The 50 mm square hitch receiver is rated for **light accessory loads only** and must never be repurposed beyond its design intent. Misuse, overloading, or recovery attachment may result in injury, equipment loss, or structural damage and is not covered by warranty.

Driver Side

The driver side of your Austrack Hard Floor camper trailer houses a range of **service, utility, and campsite-use components** that support water management, hygiene, external access, and daily operation while set up at camp. These components are positioned for convenient access and are commonly used during setup, water refilling, washing, and connection to external services.

Driver-side equipment may include water tank filling points, mains water connections, external washing facilities, hot water system access or ventilation, awning systems, and other model-specific features mounted to the camper body. Some components may be grouped within shared external areas or compartments and should be understood as part of an integrated system rather than as isolated features.

Correct operation, regular inspection, and appropriate care of all driver-side components are essential to ensure reliable water supply, safe use of external facilities, effective drainage, proper ventilation where applicable, and long-term durability of the camper.

This section of the Owners Manual provides operating guidance, safety information, and owner-level maintenance advice for driver-side components fitted to the camper. Each relevant subsection should be read carefully before use, particularly when managing water systems, operating external washing facilities, or connecting external services.

Mains water connection

Austrack campers are fitted with a **mains water connection** that allows the onboard water system to be supplied directly from an external pressurised water source, such as town water at a caravan park or serviced campsite.

When connected, mains water **bypasses the camper's water pump** and supplies water to taps and appliances using the pressure provided by the external source. This reduces wear on the water pump and provides a convenient water supply when mains water is available.

The mains water inlet fitted to Austrack campers uses a **Seaflo water inlet**, which requires a hose connection with an **American-thread fitting**. Owners should ensure they have the correct hose or adaptor before attempting connection.

Connecting to Mains Water

To connect mains water to the camper:

- Use a suitable town water hose fitted with an **American-thread connector**
- Connect the hose securely to the Seaflo water inlet on the caravan
- Slowly turn on the water supply at the campsite outlet
- Check all plumbing points for leaks before use

Once connected correctly, water is supplied directly to the caravan without drawing from the onboard tanks.

Water Pressure Variations and Noise

Water pressure from mains supplies can vary significantly between campsites. Some locations provide high pressure, while others supply **very low or inconsistent pressure**, particularly in older parks or where multiple users are drawing water simultaneously.

At some campsites, low or unstable mains pressure can cause a **whining or vibrating noise** from the water inlet or internal plumbing while water is flowing. While this noise does not indicate a fault with the caravan, it can become annoying for occupants or nearby campers.

If this occurs, Austrack recommends:

- Disconnecting from the mains water supply
- Switching to **onboard tank water** using the internal pump
- Using the mains water hose **only to fill the onboard water tanks**, rather than running directly on town pressure

This eliminates the noise and provides a more consistent water supply.

Water Pressure Protection

Because some caravan parks supply water at excessively high pressure, Austrack recommends the use of a **pressure-regulating valve** when connecting to mains water. This helps protect internal plumbing, fittings, and appliances from pressure-related damage.

Always ensure hoses, fittings, and regulators are in good condition.

Water Pump – CRITICAL WARNING

⚠️ **When connected to mains water, the onboard water pump must be switched OFF at the control panel.**

If the pump remains switched on:

- The system may attempt to draw water from onboard tanks
- Mains pressure and pump pressure may act on the system at the same time
- If water tanks are empty, the pump may run dry

Running the pump without water can cause **permanent damage** to the pump, seals, and internal components.

Always confirm the pump switch is **OFF** before turning on the mains supply.

Using Onboard Tanks instead of Mains Water

When operating from onboard tanks:

- Water pressure is generated by the caravan's pump
- Flow is typically more stable than some mains supplies
- Noise associated with low-pressure mains water is eliminated

When switching back to tank use:

- Turn off the mains supply
- Disconnect the hose
- Switch the pump back on
- Confirm correct water tank selection if a change valve is fitted

Disconnecting from Mains Water

When disconnecting:

- Turn off the water supply at the park outlet
- Open a tap briefly to relieve pressure
- Disconnect the hose from the camper
- Store the hose clean and dry

Do not leave the camper connected to mains water unattended for extended periods unless all fittings are secure and compliant.

Inspection and Maintenance

Austrack recommends periodic inspection of:

- The Seaflo water inlet for debris or damage

- Hose threads and sealing washers
- Signs of leaks at fittings or inside compartments

Any leaks or pressure issues should be addressed before continued use.

IMPORTANT NOTICE

The mains water connection is designed for **regulated town water supplies only**. It must not be connected to unregulated pumps, bore systems, or high-pressure sources.

Damage caused by incorrect connection, excessive pressure, or running the water pump while connected to mains water may not be covered under warranty.

Water Tank Inlets

Austrack campers are fitted with **dedicated water tank inlet ports** for filling the onboard fresh water tanks. These inlets are designed to provide a simple and reliable method of replenishing water supplies while travelling or at camp.

The water tank inlets operate as **gravity fill points** and are fitted with a **breather system** to allow air to escape as the tank fills. This breather plays an important role in preventing pressure build-up during filling and normal operation.

Unlike the mains water connection, the water tank inlets are **not designed for direct hose attachment**, and correct filling technique is required.

Filling the Water Tanks

The water tank inlet does not lock a hose in place.

When filling the tanks:

- Insert a small-diameter hose into the filler opening, **or**
- Hold the hose securely in position while filling
- Fill at a steady, controlled flow rate

- Monitor the fill process visually

Because the inlet is a gravity fill, the hose must be supported by the user to prevent it slipping out during filling.

Do not force oversized hoses into the filler opening, as this may damage seals or surrounding components.

Breather Port Operation and Overfilling Behaviour

Austrack water tank inlets have a **breather port** above the main inlet to allow displaced air to escape as the tank fills.

When the water tank becomes full:

- Excess water will typically **spit or trickle out of the breather outlet**
- This is a normal indication that the tank has reached capacity
- The spitting usually occurs for a short period and then subsides

⚠️ This behaviour is **normal** and does not indicate a fault or damage to the tank.

Once water is seen exiting the breather, the tank is full and filling can be stopped. Overfilling does **not** damage the tank, provided filling pressure is reasonable and controlled.

Austrack recommends not standing directly in front of the breather port if you wish to remain dry.

Locking Filler Cap and Key Operation

Each water tank inlet is fitted with a **key-locked filler cap** to help prevent contamination and unauthorised access.

Some owners may experience:

- A stiff or tight lock barrel
- Difficulty turning the key
- Resistance when opening or closing the cap

This is commonly caused by dust ingress, dry lock barrels, or infrequent use.

Tips for Stiff Filler Cap Locks

If the filler cap lock is difficult to operate:

- Ensure the cap is seated squarely before turning the key
- Apply gentle pressure and avoid forcing the key
- Use a **small amount of graphite powder or silicone-based lubricant** in the lock barrel
- Operate the lock several times to distribute lubricant

Do **not** use oil-based or sticky lubricants, as these attract dust and can worsen the problem over time.

Recommended Use of a Water Filter

Although not supplied as standard, Austrack **strongly recommends the use of a water filter** when filling onboard water tanks.

Using a suitable inline or hose-end filter helps:

- Reduce sediment and debris entering the tank
- Improve taste and odour
- Support cleaner plumbing components
- Provide better quality water for drinking and cooking

This is particularly important when filling from:

- Caravan park taps of unknown quality
- Rural or remote water supplies
- Older infrastructure that may carry sediment

Water Quality and Best Practices

To maintain clean onboard water:

- Use potable (drinking-grade) hoses only
- Store hoses clean and capped when not in use
- Replace damaged or contaminated hoses promptly
- Periodically flush tanks if water is stored for long periods

Good filling habits help keep tanks hygienic and extend component life.

After Filling

Once filling is complete:

- Remove the hose carefully
- Allow any residual water to drain from the filler area
- Ensure the filler cap is free of dirt or debris
- Secure and lock the cap fully

A properly sealed cap prevents contamination and water ingress during travel.

Common Questions and Observations

Water coming out from the top of the inlet while filling

This is normal once the tank is full and water exits via the breather.

Key difficult to turn in filler cap

Typically resolved with proper alignment and dry lubrication.

Concern about water quality

Use a filter and clean hoses to improve quality.

IMPORTANT NOTICE

The water tank inlet is designed for manual gravity filling. Normal breather discharge during filling is expected and does not indicate a fault.

Damage caused by forced hose insertion, incorrect locking, or poor maintenance may not be covered under warranty.

Boat Rack

Most Austrack Hard Floor camper trailers are fitted with a **driver-side mounted boat rack**, designed to securely carry a small boat while travelling and provide controlled deployment at camp. The boat rack forms part of the camper's engineered structure and is designed to fold between a horizontal travel position over the main lid and an upright position alongside the camper.

The boat rack is fitted to **all Austrack Hard Floor models except LT models**. Where fitted, it interacts directly with the main camper lid and driver-side components and must be operated correctly to ensure safety, stability, and long-term reliability.

Boat Rack – Travel (Closed) Position

When in the **closed (travel) position**, the boat rack:

- Lies **horizontally over the top of the main camper lid**
- Forms part of the normal pack-down and transport configuration
- Is secured using **over-centre latches on the passenger side**
- Is supported on the driver side by **mounting arms fixed directly to the chassis**

On the driver side, **large lynch pins** are installed through the chassis-mounted arms. These lynch pins provide a **secondary mechanical safety lock**, preventing the rack from folding open should a latch fail.

Before travel, always confirm:

- Passenger-side over-centre latches are fully engaged
- Driver-side lynch pins are correctly installed and clipped
- The rack is seated flat and secure over the camper lid

Opening the Boat Rack

When the camper is set up at camp, the boat rack can be moved from the travel position to the **upright (open) position**.

Opening Procedure

1. Park the camper on **level ground**
2. **Stand clear of the rack's movement path**
3. Remove the **lynch pins** from the driver-side chassis-mounted arms
4. Disengage the **over-centre latches on the passenger side**
5. Allow the rack to begin moving under control

The boat rack is **gas-strut assisted during opening**, meaning the struts help lift and support the rack as it moves. As it opens, the rack will:

- Fold **toward the driver side**
- Continue rotating until it stands **upright, vertically parallel to the camper**

Once fully upright:

- **Re-insert the lynch pins** into the driver-side mounting arms
- This prevents the rack from folding back down unintentionally, particularly in windy conditions

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SAFETY WARNING – Gas Strut Behaviour

⚠️ **IMPORTANT SAFETY WARNING**

The boat rack is **gas-strut assisted when opening**, however the gas struts **apply resistance when closing** and will naturally push back against the closing motion.

- Always **stand clear** when releasing latches
- Keep hands, arms, and head clear of the rack's swing path
- Be prepared for resistance when closing the rack

Failure to do so may result in injury, damage to the camper, or an unexpected loss of enthusiasm for dentistry.

Closing the Boat Rack (Two Persons Recommended)

Due to gas strut resistance, Austrack **strongly recommends closing the boat rack with two people**.

Recommended Closing Method

1. One person stands on the **driver side** and **pushes the rack over the top of the camper**
2. The second person stands on the **passenger side** to **catch the rack and guide it down**
3. Work together to lower the rack smoothly and under control onto the camper lid

Once the rack is seated in the closed position:

1. **Install the driver-side lynch pins first**
2. Then secure the **passenger-side over-centre latches**

Always confirm both lynch pins and latches are correctly fitted before travel.

Wind and Environmental Considerations

When the boat rack is in the **upright position**:

- Lynch pins **must always be installed**
- Wind loads can be significant due to the rack's height and surface area
- The rack must never be left unsecured

In windy conditions, ensure the rack is either fully pinned upright or fully closed and latched.

Inspection and Maintenance

Regular inspection helps ensure safe and reliable operation.

Austrack recommends checking:

- Over-centre latches for correct engagement
- Lynch pins and retaining clips for wear or deformation
- Gas struts for smooth, controlled movement
- Driver-side mounting arms and chassis attachment points

After off-road or corrugated travel, all components should be visually inspected.

IMPORTANT NOTICES

- The boat rack is **not fitted to LT models**
- Plenty X New Shape models have a shower awning and solar panel mounted to the boat rack
- The rack must **not** be used as:
    - A recovery point
    - A jacking or lifting point
    - A load-bearing platform

- Do not modify the rack, arms, struts, or mounting hardware

Incorrect operation or unauthorised modification may result in damage not covered under warranty.

Shower Awning – PLENTY X MODELS ONLY

Important Model Disclaimer

Only **new-body Plenty X models fitted with the front enclosed toolbox and boat rack** are equipped with a shower awning.

Older **Plenty X models without the front enclosed toolbox do not have a dedicated shower awning**. These models utilise the **annex system and ensuite wall configuration** for showering, in the same manner as other Austrack Hard Floor camper trailers.

Some Austrack Hard Floor camper trailer models are fitted with a **shower awning** on the driver side to provide privacy and basic weather protection when using the external shower. The shower awning creates a semi-enclosed area that allows the external shower to be used comfortably while maintaining privacy at camp.

On the **Plenty X (new body)**, the shower awning is **mounted to the boat rack**, rather than directly to the camper wall. When correctly positioned, the shower awning functions in the same manner as other Austrack shower awning setups.

The shower awning is designed as a **detachable accessory**, providing flexibility for owners to configure their camper based on travel style, trip duration, and campsite requirements.

Mounting Arrangement

On new-body **Plenty X** models, the shower awning mounts directly to the **boat rack**, not to the camper wall.

The shower awning:

- Can be **deployed and used** only when the **boat rack is in the upright (vertical) position**
- Can be **removed** when the boat rack is either:

- In the **upright (vertical) position**, or
- Folded **over the top of the camper in the closed position**

In both mounting positions, the awning brackets and fasteners remain accessible for removal and refitting.

Important:
While the shower awning can be **removed** in either rack position, it **cannot be deployed or used** unless the boat rack is standing upright in the vertical position.

Austrack shower awnings are **not freestanding structures**. They must always be supported by the **boat rack**, depending on model configuration.

Detachable Design and Travel Considerations

The shower awning is constructed to allow easy removal when not required. Owners may choose to:

- Leave the awning mounted for regular campsite use, or
- Remove it entirely when not needed

Although the shower awning can remain fitted during travel, Austrack recommends removing it when it is not required, particularly for long trips or repeated towing. Removing the awning can help to:

- Reduce overall vehicle weight
- Minimise wind resistance and aerodynamic drag
- Reduce long-term wear on mounting points

When removed, the awning should be stored securely inside the camper or tow vehicle to prevent damage.

Using the Shower Awning

The shower awning is intended to be deployed **only when the camper is stationary and set up at camp**.

Before deploying the shower awning:

- Ensure the camper is parked on level ground
- Confirm the **boat rack is fully upright** (where fitted)
- Ensure sufficient clearance beside the camper
- Check ground conditions for drainage and stability

During use:

- Deploy the awning fully and secure it as designed
- Do not operate the awning in strong winds or storm conditions

Integrating the External Shower

The external shower system is designed to integrate directly with the shower awning.

When using the shower awning:

- Attach the shower head to the provided mounting point inside the awning
- Position the shower head so water remains within the awning area
- Ensure the shower hose is not kinked or placed under tension

Always confirm water temperature before use and ensure the hose and shower head are kept clear of sharp edges or hot surfaces.

Water Management and Ground Conditions

The external shower drains **directly to ground**, and appropriate care should be taken when using the shower awning.

Austrack recommends:

- Using minimal water where possible
- Being mindful of water run-off direction and pooling

- Avoiding muddy or slippery ground conditions
- Using biodegradable soaps only, if required

Local campsite or caravan park regulations may restrict ground drainage, and it is the owner's responsibility to comply with site requirements.

After Use and Pack Down

After completing use of the shower awning:

- Turn off the external shower
- Turn off the water pump
- Allow all water to drain fully
- Remove the shower head from its mounting
- Dry the awning before packing away where possible

If the awning must be packed away while wet, it should be dried at the earliest opportunity to prevent mould, mildew, or fabric deterioration.

Cleaning and Maintenance

Regular cleaning and inspection will extend the life of the shower awning.

Austrack recommends:

- Cleaning the fabric using mild soap and clean water only
- Avoiding harsh chemicals or pressure washers
- Periodically inspecting mounting points and fasteners
- Ensuring the awning is fully dry before long-term storage

If any stitching damage, fabric wear, or mounting looseness is observed, the awning should not be used until inspected.

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IMPORTANT SAFETY NOTICE

The shower awning is a **privacy and convenience feature only** and is not a structural shelter.

It must not be:

- Used in high winds or storm conditions
- Used as a load-bearing support
- Deployed without proper support from the camper wall or boat rack

Failure to deploy, secure, or stow the shower awning correctly may result in damage not covered under warranty.

External Shower System – PLENTY X MODELS ONLY

Important Model Disclaimer

Only **new-body Plenty X models fitted with the front enclosed toolbox and boat rack** are equipped with an external shower system.

Older **Plenty X models without the front enclosed toolbox do not have an on board external shower system and instead use the AusTuff Portable Shower System**, in the same manner as other Austrack Hard Floor camper trailers.

The **external shower system fitted to the Austrack Plenty X** provides a convenient outdoor washing solution for campsite use. It is intended for tasks such as rinsing off after swimming, washing equipment, cleaning footwear, or general outdoor hygiene where internal facilities are not required.

On the Plenty X, the external shower is located within a **lockable compartment on the driver side** of the camper. This compartment may also contain other water system components, such as the **water tank selection valve**, and should be treated as a shared service area.

The external shower operates from the camper's **pressurised fresh water system** and may supply **cold water only** or **both hot and cold water**, depending on whether a hot water system is fitted and operating.

Important Drainage Information – READ BEFORE USE

⚠️ **The external shower on the Plenty X does NOT drain into a grey water tank.**

All water used by the external shower:

- Drains **directly to the ground**
- Is **not captured or stored onboard**
- Has **no internal grey-water connection**

Because of this:

- Use of the external shower must comply with **local campsite and park regulations**
- Water runoff must be **managed responsibly**
- Soaps and detergents must be used with care

This is an important distinction and differs from internal sinks or showers found on other caravan types.

Intended Use and General Safety

The external shower is designed for **short-duration, supervised use only** and must not be left running unattended.

When using the external shower:

- Always supervise water flow
- Do not leave the shower head running on the ground
- Be mindful that the surrounding surface may become **slippery**
- Keep all **electrical equipment and power leads well clear**

Uncontrolled runoff or unattended use may create safety hazards or environmental impact.

Hot and Cold Water Operation

The external shower draws water from the onboard fresh water tanks and, where fitted and enabled, the hot water system.

Before using the shower:

- Ensure the **water pump is switched on**
- Confirm sufficient water is available in the selected tank
- If hot water is required, ensure the **hot water system is operating**

⚠️ **Water temperature may be very hot at initial flow.**
Always test the water temperature before directing it onto skin.

Temperature fluctuations may occur if:

- Other taps are opened
- The water pump cycles on or off
- The water tank selection is changed

Adjust water flow gradually to avoid scalding.

Shower Hose and Shower Head Use

The Plenty X external shower is fitted with a **flexible hose and handheld shower head**.

For safe and reliable operation:

- Avoid kinking or twisting the hose
- Keep the hose clear of sharp edges
- Ensure the hose is not under tension during use
- Return the shower head to its holder after use
- Ensure the hose is not trapped when closing the compartment door

Incorrect stowing may damage fittings, seals, or the compartment door.

Environmental Considerations

Because shower water drains to ground, responsible use is essential.

Austrack recommends:

- Using **biodegradable soaps only**, if required
- Minimising overall water use
- Avoiding runoff paths that may affect nearby campsites
- Preventing water from pooling beneath the camper

Some locations restrict or prohibit ground drainage. Owners must comply with all local requirements.

Water Tank Change Valve (Location Reference)

On the Plenty X, the **water tank change valve is often located inside the external shower compartment**.

While full operation is covered elsewhere in this manual, note that:

- Changing tank selection may affect water availability and temperature
- Valves should never be forced
- Tank selection should be checked **before** shower use

Care should be taken not to disturb valve positions unintentionally during shower operation.

After Use and Pack Down

After using the external shower:

- Turn off the tap or mixer completely
- Switch off the water pump if no longer required
- Allow residual water to drain from the hose
- Neatly stow the hose and shower head
- Wipe excess moisture from inside the compartment if required

Ensure the compartment door closes freely and seals correctly before travel.

Routine Inspection and Maintenance

Regular inspection helps prevent leaks and water damage.

Austrack recommends checking:

- Hose condition and connections
- Tap or mixer operation
- Compartment seals for signs of moisture ingress
- Hose holder and mounting point security

If leaks, reduced flow, stiffness, or damage are observed, the system should be inspected before continued use.

Common Issues and Troubleshooting

Low water flow
Possible causes:

- Low tank level
- Partially opened tap
- Hose restriction

Action:
Check tank selection, pump operation, and hose routing.

Very hot water at start-up
Possible cause:

- Hot water standing in the line

Action:
Test temperature before use and adjust gradually.

Water found inside compartment
Possible cause:

- Hose or fitting not seated correctly

Action:
Stop use immediately and inspect fittings.

IMPORTANT NOTICE

The external shower on the Plenty X forms part of the camper's **fresh water system**. Incorrect use, unattended operation, or failure to manage ground drainage responsibly may result in water damage, environmental impact, or non-compliance with campsite regulations.

All plumbing repairs or modifications must be carried out by **qualified service personnel**.

Hot Water System Ventilation – PLENTY X MODELS ONLY

Important Model Disclaimer

Only **new-body Plenty X models fitted with the front enclosed toolbox and boat rack** are equipped with an instantaneous hot water system.

Older **Plenty X models without the front enclosed toolbox do not have an on board hot water system and instead use the AusTuff Portable Shower System**, in the same manner as other Austrack Hard Floor camper trailers.

New-body Austrack **Plenty X** camper trailers are fitted with a **WLF gas hot water system**, which requires correct external ventilation to operate safely and efficiently. The hot water system ventilation opening is located on the **driver side of the camper** and must remain unobstructed at all times.

Unlike other models in the Austrack range, the Plenty X does **not** use a Truma hot water system. Ventilation design, airflow requirements, and access procedures are specific to the **WLF hot water system**, and owners must ensure these requirements are understood and followed.

This section provides **ventilation-specific information only**. Full operating instructions, ignition procedures, servicing requirements, and safety guidelines are covered in the dedicated **Hot Water System** section later in this Owners Manual.

General Ventilation Requirements

Correct ventilation is critical for safe operation of the WLF hot water system. Ventilation is required to:

- Supply adequate combustion air
- Allow exhaust gases and heat to dissipate safely
- Prevent overheating of internal components

To ensure safe operation:

- Ventilation openings must **never be covered, blocked, or restricted**
- No items are to be stored against or inside ventilation areas
- Vent openings must be kept clear of dust, mud, leaves, insects, and debris

Operating the hot water system without proper ventilation is unsafe and may lead to system damage, faults, or hazardous conditions.

WLF Hot Water System Ventilation Design

On the Plenty X, the WLF hot water system uses a **built-in ventilation arrangement** that forms part of the appliance access door.

Key features include:

- A ventilation grille integrated into the hot water system access door
- A fixed grille that prevents ingress of debris or foreign objects
- No removable external vent cover

⚠️ **The WLF hot water system access door must remain CLOSED during operation.**

The door is designed to:

- Allow correct airflow through the integrated vent grille
- Provide appropriate exhaust and heat dissipation
- Protect internal components from weather and contamination

The door should only be opened for inspection, servicing, or maintenance and must be securely closed before operating the hot water system.

Inspection and Maintenance of Ventilation Areas

To ensure continued safe operation, ventilation areas should be inspected regularly.

Austrack recommends:

- Visually inspecting the ventilation grille for blockages
- Removing dust, insects, or debris carefully
- Ensuring the access door opens and closes freely
- Checking that seals and grilles remain intact and undamaged

If any of the following are observed, the hot water system should be inspected before further use:

- Excessive soot or heat discolouration
- Corrosion around the vent area
- Damaged or loose grilles
- Signs of overheating or restricted airflow

Travel and Storage Considerations

Before travelling or storing the camper:

- Ensure the WLF hot water system access door is **fully closed and latched**
- Confirm that no equipment, bags, or accessories are stored against the ventilation area
- Ensure the ventilation grille is unobstructed

Never travel with hot water system access doors open or unsecured

Relationship to the Hot Water System Section

This section covers **ventilation requirements only**.

For detailed information relating to:

- Hot water system operation
- Ignition and shutdown procedures
- Gas supply requirements
- Maintenance and servicing instructions

- Fault indication and troubleshooting

Refer to the **Hot Water System** section later in this Owners Manual.

IMPORTANT SAFETY NOTICE

Hot water systems operate at high temperatures and involve combustion processes. Restricting ventilation or operating the system with incorrect airflow presents serious safety risks.

Always ensure that ventilation requirements specific to the **WLF hot water system fitted to the Plenty X** are fully understood and complied with before operation.

Interior

The interior of your Austrack Hard Floor camper trailer is designed to provide a functional, comfortable, and efficient living space once the camper is set up at camp. Interior components are arranged to maximise usable space while supporting sleeping, climate control, and day-to-day activities during travel and extended stays.

Depending on model and configuration, the interior may include foam mattresses, climate control systems, heating appliances, removable or convertible furniture, and internal structural components used during setup and pack-down. Some interior features serve multiple purposes and may require reconfiguration between travel mode and camp mode.

Correct setup, operation, and care of all interior components are essential for comfort, safety, and long-term durability. Owners should familiarise themselves with interior layouts and understand how components interact during use, particularly where items fold, relocate, or support other interior features.

This section of the Owners Manual provides operating guidance, safety information, and owner-level care advice for interior components fitted to the camper. Each relevant subsection should be read carefully before use, especially when configuring sleeping arrangements, operating climate control systems, or handling internal support structures.

Mattress

All Austrack Hard Floor camper trailers are fitted with **foam mattresses**, selected specifically to suit the folding construction and pack-down requirements of hard floor camper designs. Foam mattresses provide a practical balance between comfort, durability, and flexibility, allowing them to fold, segment, and store correctly without damage during transport.

Mattress layouts, sizes, and configurations vary between models and, in some cases, between front and rear sleeping areas within the same camper. Owners should familiarise themselves with the mattress arrangement fitted to their specific model to ensure correct setup, conversion, and ongoing care.

This section outlines mattress construction, model-specific configurations, proper usage, and detailed cleaning and maintenance requirements.

Mattress Construction and Design

All mattresses fitted to Austrack Hard Floor camper trailers share the following design characteristics:

- Foam construction
- Segmented or foldable design where required
- Intended to remain flat or gently folded during storage
- Designed to integrate with folding lids, slide-outs, or rear fold sections

Foam mattresses are used because they tolerate repeated folding better than spring or hybrid mattresses, and they store efficiently within the camper. They are not designed to be tightly rolled, sharply bent, or compressed under heavy objects.

Mattress Retention Straps and Buckles

Any mattress fitted to a **folding lid, forward fold, rear fold, or slide-out section** is secured during travel using **retention straps and buckles**. These straps are essential for transport and ensure the mattress remains correctly positioned during pack-down and towing.

⚠️ **Before sleeping, all mattress straps and buckles must be disengaged and moved out of the sleeping area.**

- Straps and buckles should be fully released
- Buckles should be tucked out of the way
- Ensure no hard components remain beneath the mattress surface

Failure to do this may result in:

- Pressure points
- Discomfort during sleep
- An oddly memorable camping experience for the wrong reasons

Model Specific Mattress Configurations

Telegraph X

The **Telegraph X** features a single sleeping area:

- **Forward fold:**
    - 1 × Queen-size foam mattress

Telegraph LT

The **Telegraph LT** shares the same primary sleeping configuration as the Telegraph X:

- **Forward fold:**
    - 1 × Queen-size foam mattress

Savannah X

The **Savannah X** includes two sleeping zones with flexible functionality:

- **Forward fold:**
    - 1 × Queen-size foam mattress
- **Rear slide-out:**
    - 1 × Double-size foam mattress

The rear slide-out mattress can be expanded to a **Queen-size sleeping surface** by:

- Folding down the rear lounge backrest
- Installing the supplied mattress infill section

All components should be positioned flat and aligned before use.

Plenty X – Old Shape

Older **Plenty X** models feature two independent sleeping areas:

- **Forward fold:**
  - 1 × Double-size foam mattress
- **Rear fold:**
  - 1 × Double-size foam mattress

Both mattresses fold and stow as part of the camper pack-down sequence.

Plenty X – New Shape

The **new-body Plenty X** features a revised interior layout:

- **Forward fold:**
  - 1 × Queen-size foam mattress
- **Rear fold:**
  - 1 × Single-size foam mattress

This configuration reflects updated space optimisation and storage design.

Mattress Setup and Use

When setting up sleeping areas:

- Ensure mattresses are laid flat and evenly supported
- Install infill pieces fully and correctly
- Release all retaining straps and buckles
- Avoid twisting, over-folding, or forcing mattresses into position

Mattresses should only be used in their intended configuration and should never be forced into spaces they are not designed to fit.

Cleaning and Routine Care

Regular cleaning and good housekeeping will significantly extend mattress life and improve comfort.

Basic Cleaning

Austrack recommends:

- Using **mild detergent** and clean water for surface cleaning
- Wiping with a **damp cloth only** — never soaking the mattress
- Avoiding harsh chemicals, solvents, or bleach

Do **not**:

- Pressure wash mattresses
- Fully submerge in water
- Use steam cleaners

These methods may damage foam structure and adhesives.

Moisture Management and Condensation

Foam mattresses are particularly sensitive to moisture.

To prevent mould, mildew, and odour:

- Allow mattresses to **air out regularly**
- Lift mattresses during extended stays to aid airflow
- Dry bedding promptly after condensation or humid nights
- Avoid packing mattresses away damp

If mattresses become wet:

- Dry completely before pack-down
- Increase airflow until fully dry

Packing away damp mattresses can lead to long-term damage.

Storage and Pack Down Considerations

During pack-down:

- Ensure mattresses are fully dry
- Fold only along intended fold lines
- Engage retention straps correctly
- Ensure buckles are positioned so they do not twist or pinch mattress edges

Incorrect folding or trapping buckles against foam may lead to premature wear.

Mattress Protection

Austrack strongly recommends:

- Using **mattress protectors**
- Using fitted sheets that do not bunch or wrinkle
- Avoiding sharp objects or heavy loads on mattress surfaces

Protectors help manage condensation, spills, and general wear.

IMPORTANT NOTICE

Austrack foam mattresses are designed specifically for Hard Floor camper layouts. Damage caused by:

- Incorrect folding

- Improper storage
- Moisture exposure
- Misuse of retaining straps or buckles

may not be covered under warranty.

Always follow the setup, use, and pack-down procedures outlined in this manual to maintain comfort and longevity.

Internal Table and Bed Conversion

Austrack Hard Floor camper trailers are fitted with a **multi-purpose internal table system** designed to serve three functions:

- As a **table** for dining or general use
- As a **base component** of an additional sleeping configuration
- As a **central stacking platform** during transport and pack-down

An important point to understand is that **bed mode and transport mode are essentially the same configuration**. The difference lies only in what is packed **on and under the table** during transport. Correct handling of the table, supports, and adjustable arms is critical for safety, comfort, and reliable pack-down.

Internal Table Construction and Mounting

The internal table is normally:

- Mounted to a **vertical internal panel beneath the seating area**
- Supported by a **detachable, adjustable table arm**
- Able to pivot when configured for table use

The adjustable arm:

- Is required **only when the table is being used as a table**

- Must be **fully removed** for bed mode and transport mode
- Is not designed to support body weight or side loads

The table must **never remain attached to the arm** when converting to a bed or packing the camper down.

Detaching the Table and Adjustable Arms

Before converting to **bed mode or transport mode**, the adjustable arms must be removed completely.

To detach the arms correctly:

1. Locate the **tightening handle** on the adjustable arm
2. Rotate the handle **anti-clockwise** to loosen
3. Once loosened, the arm sections will **slide apart easily**
4. Remove the arm fully and store it securely

The arm must be:

- Completely removed
- Stored so it cannot move or rattle during travel

⚠️ The adjustable arm **must be installed** when using the table as a table, and **must be removed** for bed or transport configurations.

Transport Mode vs Bed Mode (Important Concept)

It is important to understand the relationship between transport and bed configurations:

- **Transport mode and bed mode use the same base configuration**
- The table sits on its support points in both cases
- The difference is only what is stacked above and below it

In bed mode:

- The table sits on its supports
- An infill cushion is placed on top
- The area is used as a sleeping surface

In transport mode:

- The table remains in the same position
- Cushions, mattresses, and loose items are **packed underneath and on top**
- Everything is stacked deliberately to allow correct camper closure

This process requires careful placement and is best described as **methodical and very much a game of Tetris**.

Bed Base Setup Using the Table

Once the arms have been removed, the table is used as part of the **bed base**.

The interior includes:

- **Two fixed slats** positioned just forward of the couch cushions

To set up the bed:

- Place the table flat onto the two slats
- Ensure it sits evenly and securely
- Position the **supplied infill cushion** on top of the table
- Align the infill cushion flush with the couch cushions

Load Sharing and Weight Limits (Critical)

⚠️ **The internal table is NOT a load-bearing structure in any configuration.**

When used as a bed base:

- Body weight is distributed between:
    - The table surface
    - The support slats
    - The couch structure behind
- The table alone does **not** support sleeping weight

Important restrictions:

- Do **not** jump on the table
- Do **not** sit, stand, or lean on the table in table mode
- No physical or high-movement activities when in bed mode
- **Only one person is recommended** to sleep on this bed configuration

Exceeding these limits may lead to damage or structural failure.

Returning to Table Configuration

When converting back to table use:

1. Remove the infill cushion
2. Lift the table off the support slats
3. Reassemble the adjustable arm sections
4. Tighten the arm using the handle (clockwise)
5. Reattach the table to the arm and confirm secure pivoting

The table must **never be used without the arm installed** in table mode.

Pack Down and Transport Considerations

During pack-down:

- The table remains in bed-base position
- Cushions, mattresses, and gear are stacked around it
- Everything must be placed **in a precise order**

Austrack strongly recommends:

- Packing the same way every time
- Taking photos during the first pack-down
- Using these photos as a reference to avoid setup issues later

Incorrect packing may prevent the camper from closing properly.

Inspection and Maintenance

Regular inspection is recommended for:

- Table surface condition
- Support slats
- Adjustable arm threads and handles
- Mounting locations on the vertical panel

If the table does not sit flat, feels unstable, or shows damage, it should not be used until inspected.

IMPORTANT NOTICES

- The adjustable arm **must be removed** for bed and transport mode
- The adjustable arm **must be installed** for table use
- The table itself is **not load-bearing**
- One person sleeping on the table bed is recommended
- Incorrect use may result in damage not covered under warranty

Following the correct procedures ensures safe use, proper pack-down, and a comfortable interior setup.

Internal Poles – Setup and Pack Down

Austrack Hard Floor camper trailers utilise a combination of **internal support poles** to correctly tension the canvas, maintain internal shape, and support the tent structure during use. These poles are an essential part of the camper's setup system and must be installed and removed correctly to ensure proper operation, prevent damage, and allow reliable closing of the camper.

There are two types of internal poles used throughout the Hard Floor range:

- **Structural U-shaped poles**, which form the main tent framework
- **Removable internal poles**, which are added during setup and removed before pack-down

Understanding how each type is handled is critical for both setup and closing procedures.

Structural U-Shaped Poles

The **U-shaped poles** are the primary structural elements that hold the main tent section upright.

Key characteristics:

- These poles **remain installed in the camper at all times**
- They fold internally as part of the lid-closing process
- They must **never be removed** for pack-down

- They establish the core shape and height of the tent system

Although they stay in place, U-shaped poles are **fully adjustable** and must be set correctly before attempting to close the camper.

Critical U-Shaped Pole Adjustment Requirement

⚠️ **Before closing the camper, all U-shaped poles must be adjusted to the lowest, even position possible.**

This means:

- Each side of the U-shaped pole is set to the **same height**
- The poles are **fully lowered**
- No pole remains extended above another

If U-shaped poles are left uneven or too high, this can result in:

- Canvas bunching or misalignment
- Difficulty closing the camper
- Excessive stress on poles or fabric
- Long-term structural damage

If resistance is felt when closing the camper, stop immediately and re-check pole settings. Never force the camper closed.

Removable Internal Poles

All **internal poles other than the U-shaped poles** are **removable poles**.

These poles:

- Are installed after the tent has been largely opened
- Provide additional canvas tension and shape

- Must be **completely removed before pack-down**

⚠️ **All removable internal poles must be taken out before closing the camper.**

Leaving removable poles installed during pack-down can:

- Interfere with folding lids
- Damage the canvas
- Bend or break poles
- Prevent the camper from closing correctly

Setup Sequence – Canvas Alignment Before Installing Poles

Correct canvas alignment during setup is essential, particularly to ensure smooth closure of doors and windows later on.

Before Installing Any Internal Poles

During setup, **all canvas doors, windows, and zips must be fully zipped closed before extending or installing any internal poles**.

Closing all canvas openings first:

- Allows the canvas panels to **align naturally** as tension is applied
- Ensures zips track correctly without twisting or side-loading
- Prevents sections of canvas from being pulled out of alignment

If poles are installed while doors or windows are open, the canvas can:

- Sit skewed once tensioned
- Become difficult or impossible to zip closed later
- Be damaged if zips or fabric are forced

This is particularly important **at night**, when owners may want to quickly close doors and windows before sleeping. Misaligned canvas may:

- Prevent zips from closing properly
- Encourage force being applied to zips or fabric, risking tearing
- Leave openings that allow insects or wildlife to enter the camper while occupants are asleep or away

Proper canvas alignment during initial setup helps ensure doors and windows can be closed smoothly and safely when required.

Installing Internal Poles During Setup

When installing internal poles:

- Refer to the **internal pole diagram** supplied with the camper
- Install poles in the order shown
- Extend poles gradually and evenly
- Do not fully tension one pole before the others are installed

All internal poles, including U-shaped poles, are adjustable and should be set evenly to maintain proper canvas tension and internal alignment.

Pack Down Procedure for Internal Poles

Before closing the camper:

1. Ensure all canvas doors and windows are zipped closed
2. Remove **all removable internal poles** completely
3. Adjust all **U-shaped poles to their lowest, even position**
4. Confirm no poles or fittings obstruct lid movement
5. Proceed with the normal camper closing sequence

If resistance is encountered at any stage, stop and re-check pole positions.

Pole Handling and Damage Prevention

Internal poles are structural components and must always be handled carefully.

Improper handling can lead to:

- Bent or damaged poles
- Difficulty adjusting pole height
- Uneven canvas tension
- Long-term wear or failure of pole fittings

Poles should:

- Be seated gently into locating points
- Be adjusted evenly and progressively
- Never be forced into place or removed under load

Any pole showing signs of bending, cracking, or stiffness should not be used until inspected or replaced.

Inspection and Care

Austrack recommends regularly inspecting all internal poles for:

- Straightness and alignment
- Smooth adjustment operation
- Secure end fittings
- Signs of wear, corrosion, or damage

After wet or dusty trips, poles should be wiped clean and allowed to dry before storage to prevent corrosion or contamination of adjustment mechanisms.

IMPORTANT NOTICES

- Only the **U-shaped structural poles remain installed** during pack-down
- **All other internal poles must be removed** before closing the camper
- U-shaped poles must be **fully lowered and even** before closing
- Canvas must be zipped closed before installing poles
- Forcing the camper closed may cause damage not covered under warranty

Correct pole setup and handling are essential to the safe operation and longevity of your Austrack Hard Floor camper trailer.

Savannah X Rear Slide Out – Setup and Pack Down

The **Savannah X rear slide-out system** is a key structural feature designed to significantly expand the internal living and sleeping area of the camper when set up correctly. Unlike simpler folding layouts, the rear slide-out integrates **multiple interdependent systems**, including the rear bar assembly, internal pole structure, canvas infill sections, support arms, and internal furniture layouts.

Because the rear slide-out forms part of the camper's structural geometry when deployed, it is governed by **specific sequencing requirements and physical interlocks** that must be observed. These relationships are intentional and engineered to ensure stability, canvas integrity, and long-term durability.

Owners should approach setup and pack-down of the Savannah X rear slide-out as a **process**, not a single action. Correct results rely on preparation, observation, and consistency.

Mechanical Interdependencies (READ CAREFULLY)

The Savannah X rear slide-out has several **designed dependencies** that control how and when it can be operated.

- The **rear bar must be fully lowered** before the rear slide-out can move
- The rear slide-out is **physically prevented from extending** while the rear bar is raised
- The **main entry door cannot be opened** until the rear slide-out is extended

These behaviours:

- Are **intentional**
- Indicate correct mechanical alignment
- Are **not faults or malfunctions**

If a component does not move or open, do not force it. One of the prerequisite conditions has not yet been met.

Rear Slide Out Securing System (Travel Position)

When closed for travel, the rear slide-out is secured using **four triangle-style compression locks**, identical in principle to those used on the entry door.

- Two compression locks are located on each side of the slide-out
- These locks draw the slide-out firmly against the camper body
- Proper engagement is essential for structural rigidity and weather sealing

Before towing:

- All four locks must be engaged
- The slide-out must sit evenly against the body
- No canvas, seals, or fabric may be trapped in the locking interface

Uneven engagement usually indicates a preparation or alignment issue and should be corrected before travel.

Rear Bar Requirements – Non-Negotiable

⚠️ **The rear bar must be fully lowered before attempting to extend the rear slide-out.**

This is not a recommendation — it is a **physical requirement**.

On the Savannah X:

- The rear slide-out **cannot move** without rear bar deployment
- This ensures the slide-out cannot be extended without support
- It also ensures correct geometry for the support arms

If the slide-out does not move freely, reassess rear bar position before proceeding.

Rear Slide Out Setup Procedure

Step 1: Lower the Rear Bar

Lowering the rear bar establishes the structural base required for rear slide-out support.

1. Park the camper on **level ground**
2. Disengage all **over-centre latches**
3. Remove all **lynch pins**
4. Lower the rear bar **slowly and under full control**

The bar should settle evenly without binding or resistance.

Step 2: Install Rear Support Arms

The Savannah X is supplied with **adjustable rear support arms** that provide the primary structural support for the slide-out when extended.

- Install both arms between the rear bar and slide-out frame
- Adjust arms evenly to level the slide-out

- Fully secure all locking mechanisms

The slide-out **must never be used** without these arms installed.

Step 3: Release Rear Slide-Out Compression Locks

Before extension:

- Unlock all four triangle compression locks
- Fold locking handles clear
- Confirm the slide-out is completely free

Any resistance at this stage should be investigated — never compensated for with force.

Step 4: Deploy the Rear Slide-Out

(Canvas Observation Required)

Extend the slide-out **slowly and evenly** while actively observing the canvas.

- Monitor fabric as it transitions across body edges
- Guide canvas where required
- Allow natural folding paths to develop

Canvas tension and alignment are directly influenced by how carefully this step is performed. Even minor misalignment at this stage can manifest later as resistance, bunching, or zip mis-tracking.

Step 5: Canvas Infill Panels (Sail Track System)

The Savannah X rear slide-out includes **canvas infill panels pre-installed in sail tracks** on the slide-out section.

During setup:

- These infills must be deployed fully
- All associated zips must be closed completely

They form part of the primary weather seal and internal shape.

Interior Configuration During Use

Once deployed, the rear slide-out bed sits **behind the rear couch area**.

Final interior setup should only occur after:

- All internal poles have been installed as per the pole diagram
- Canvas openings are zipped closed prior to final pole adjustment

Proper sequencing ensures that evening closure of doors and windows remains smooth and stress-free.

Rear Slide Out Pack Down Procedure

Pack-down must be approached with the same deliberate process used during setup.

Step 1: Interior Preparation (Critical)

Before retracting the slide-out:

- Remove all bedding
- Remove all seat cushions from the couch

Cushion and Annex Placement Rules

Proper interior preparation is essential to avoid interference with:

- U-shaped pole travel
- Slide-out movement

- Canvas folding paths

Cushions must be stacked:

- On the **floor and slide out bed surface only**
- To a maximum height **no greater than the couch base** (with seat cushions removed)
- Away from side walls and edges

Slide-out bed surface:

- May hold cushions no higher than 1 flat cushion, with no stacking
- Cushions must be flat, centred, and not overhanging

Annex:

- Must be stored on the floor
- Must remain within height limits
- Must not obstruct pole paths or canvas returns

Clearance for the **U-shaped poles** is mandatory.

Recommendation:
Photograph the final cushion and annex layout the first time pack-down is successful. Repeating the same arrangement dramatically improves reliability.

Step 2: Canvas and Pole Preparation

Before moving the slide-out:

- Zip all canvas openings closed
- Unzip rear slide-out infill panels
- Remove all removable internal poles
- Fully lower all U-shaped poles to the **lowest even position**

Step 3: Retract the Rear Slide-Out

- Retract slowly
- Actively guide canvas
- Observe all fabric transitions

If resistance is felt, stop and reassess. Forcing movement at this stage may cause damage.

Step 4: Secure Slide-Out and Rear Bar

Once fully closed:

1. Lock all four compression locks
2. Remove rear support arms
3. Raise the rear bar
4. Install lynch pins
5. Engage over-centre latches

Complete verification before travel is essential.

Ownership Considerations

The Savannah X rear slide-out system rewards:

- Consistency
- Observation
- Repetition of correct technique

Each successful setup and pack-down builds familiarity. Owners who follow the prescribed sequence will find the process predictable and controlled. Those who attempt shortcuts may encounter resistance, misalignment, or unnecessary frustration.

IMPORTANT NOTICES

- Rear bar must be lowered before slide-out movement
- Entry door remains locked until slide-out is extended
- Support arms are mandatory
- Canvas must be actively monitored
- Cushion stacking limits must be respected
- U-shaped pole clearance is critical
- Forcing components may cause damage not covered under warranty

Plenty LT Rear Fold – Setup and Pack Down

The **Plenty LT** incorporates a **rear fold-out sleeping section** that extends the available interior space once the camper is correctly set up at camp. This rear fold operates as part of a **forward-fold hard floor configuration** and is supported by **integrated stabiliser legs**, which are actively used throughout both setup and pack-down.

While the Plenty LT does not use rear slide-out mechanisms, rear bars, or boat racks, its rear fold system is designed to integrate precisely with the interior layout, internal pole structure, canvas geometry, and soft-goods storage. As a result, **methodical sequencing and careful interior preparation — particularly cushion placement — are essential** for reliable operation.

When handled correctly and consistently, the rear fold system operates smoothly and predictably.

Design Overview and Operating Characteristics

The rear fold system on the Plenty LT is characterised by:

- A **main forward-opening lid**, which must be deployed first
- A **rear fold section stored beneath the main fold** when closed
- **Stabiliser legs mounted to the underside of the rear fold**, providing both support and controlled movement
- Tight interior tolerances once folded, requiring **disciplined soft-goods placement**

The stabiliser legs are not passive components. They are intended to:

- Assist in **both opening and closing** operations
- Support the rear fold during use
- Control load during folding transitions

Rear Fold Setup Procedure

Step 1: Open the Main Lid (Forward Fold)

The rear fold cannot be accessed until the **main camper lid has been fully opened**.

1. Park the camper on **level ground**
2. Release all **main lid latches**
3. Open the lid fully toward the front of the camper
4. Secure the lid using the **front winch system**

The main lid must be fully opened and positively supported before progressing further.

Step 2: Deploy the Rear Fold Section

With the main lid open:

- Locate the rear fold section stored beneath the main fold
- Begin folding the rear section **outward toward the rear** of the camper
- Use the **stabiliser legs to assist and guide the movement**, particularly through the initial transition

The rear fold should pivot smoothly and under control. At no point should force be required.

Step 3: Stabiliser Legs – Deployment and Final Adjustment

Once the rear fold is extended:

- Swing the stabiliser legs down from their stored position
- Use the legs to help position the rear fold accurately
- Extend each leg until it contacts the ground
- Adjust leg height so the rear fold sits level with the rest of the camper
- Tighten all adjustment clamps securely

The stabiliser legs now:

- Carry the structural load of the rear fold
- Maintain sleeping surface alignment
- Prevent movement during use

Interior Setup Following Rear Fold Deployment

After the rear fold is fully supported:

- Continue setting up the camper following standard Hard Floor procedures
- Install internal poles as shown on the **pole diagram**
- Set up the main body tent

- Proceed with annex setup if applicable

From this point onward, the Plenty LT interior behaves like other Hard Floor configurations.

Rear Fold Pack Down Procedure

Pack-down should be approached as a **controlled sequence**, with particular attention paid to cushion and soft-goods placement.

Step 1: Interior Preparation (Essential)

Before folding the rear section:

- Remove all bedding
- Remove all loose items from the rear fold platform
- Remove any seating cushions from the couch area

This step establishes the clear interior volume required for folding panels and internal poles.

Cushion and Soft-Goods Pack-Down Requirements

Interior clearance within the Plenty LT is carefully managed by design. Cushion placement directly affects:

- Folding panel movement
- Internal pole operation
- Canvas folding paths

Cushions must be packed as follows:

- Cushions must be placed **on the floor only**
- Total stack height must be **no higher than the base of the couch** once seat cushions are removed

- Cushions must be stacked flat — not upright or leaning
- Cushion stacks must be positioned **away from side walls and exterior edges**
- All cushion stacks must remain clear of:
    - U-shaped pole locations
    - Folding panel edges
    - Canvas return paths

Improper height or placement may obstruct folding movement and prevent proper closure.

📸 **Strong Recommendation**

Because interior packing relies on consistent placement, Austrack strongly recommends:

- Photographing or diagramming the cushion layout during the first successful pack-down
- Repeating that arrangement each time

Consistency is key to predictable operation.

Step 2: Using Stabiliser Legs to Assist Closing

Before folding the rear section closed:

- Loosen stabiliser leg clamps
- Use the stabiliser legs to **support and control the rear fold** as it begins to move inward
- Gradually retract the legs as the fold is guided back underneath the main fold

This controlled approach reduces sudden load shifts and helps maintain alignment.

Step 3: Stow the Rear Fold

- Continue guiding the rear fold **back beneath the main fold**
- Fully retract and stow stabiliser legs once folding is complete
- Confirm the rear fold lies flat and evenly seated
- Check that no canvas, cushions, or poles are trapped

Step 4: Close the Main Lid

- Release the front winch tension as per standard procedure
- Lower the main lid carefully
- Secure all lid latches fully before travel

Handling and Observation Notes

- All folding operations should feel smooth and controlled
- Resistance indicates misalignment or obstruction, not stiffness
- Canvas should always be observed during folding transitions
- Correct results depend on patience, alignment, and repetition

Inspection and Ongoing Care

Regular inspection should include:

- Stabiliser leg pivots, clamps, and adjustment threads
- Rear fold hinges and attachment points
- Cushion compression and condition
- Canvas edges adjacent to folding interfaces

Any irregular movement, wear, or resistance should be addressed promptly.

IMPORTANT NOTICES

- Rear fold must not be deployed until the main lid is fully opened and secured
- Stabiliser legs must be correctly adjusted and locked before use
- Cushion pack-down height and placement requirements must be followed
- Stabiliser legs may and should be used to assist both opening and closing
- All legs must be fully stowed before closing the main lid
- Forcing panels or lids may cause damage not covered under warranty

Plenty X Rear Fold – Setup and Pack Down

The **Plenty X** is fitted with a **two-piece rear folding lid system**, consisting of a **front folding lid** and a **rear folding lid**, which together form the primary sleeping and internal space when the camper is set up at camp. Unlike LT models, the Plenty X is also fitted with a **boat rack** and a **rear spare wheel frame**, both of which form part of the setup sequence and structural support system.

The rear folding lid on the Plenty X is **not supported independently**. Instead, it relies on the **fold-down spare wheel frame** for structural support when deployed. Because of this design, strict sequencing must be followed during both setup and pack-down.

Each component has a defined role, and each step enables the next. Incorrect order will prevent movement, cause interference, or result in damage.

Initial Requirements – BEFORE ANY LID IS OPERATED

Before opening **any** camper lid on the Plenty X, the following components **must** be addressed in order.

Boat Rack – Mandatory First Step

The Plenty X is fitted with a **driver-side mounted boat rack**, which must be opened before any lid movement occurs.

- Fold the boat rack into the upright (vertical) position
- Secure it using the appropriate pins and latches
- Confirm the rack is stable and fully clear of all lid travel paths

Camper lids must **not** be opened with the boat rack closed, as interference or damage may occur.

Spare Wheel Frame – Critical Structural and Clearance Requirement

⚠️ **The spare wheel frame must be fully folded down before opening or closing the rear folding lid.**

This requirement applies to:

- **Old-body Plenty X models** (single or dual spare wheels)
- **New-body Plenty X models** (single spare wheel)

On the Plenty X:

- The rear folding lid **latches directly to the spare wheel frame**
- The spare wheel frame provides **primary structural support** for the rear bed
- The rear folding lid **physically passes over the spare wheel position** during folding operations

If the spare wheel or wheel frame is **not folded down**:

- The rear lid **cannot fold over**
- The lid will **physically strike the tyre or wheel frame**
- The folding sequence will jam due to obstruction

Attempting to push or force the lid while the spare wheel frame is upright will result in:

- **Severe damage to the camper**
- Deformation of the rear folding lid
- Damage to hinges, latches, and lid structure

- Potential damage to the spare wheel frame itself

This is not a clearance tolerance issue — **the lid will contact the tyre**.

Before proceeding, always visually confirm:

- All spare wheels are fully folded down
- The spare wheel frame is completely clear of the folding path
- No part of the tyre protrudes into the lid travel area

Lid Configuration and Model Variations

The Plenty X uses **two external folding lids**:

- A **front lid**
- A **rear lid**

Both lids are secured using **over-centre latches**, with differences between old-body and new-body models.

Old-Body Plenty X

- Front and rear lids are **smaller**
- Both lids are generally manageable by hand
- Both ends are secured using **over-centre latches**

New-Body Plenty X

- The **front lid is significantly larger**
- The **rear lid is smaller**
- The front lid may be opened:

  - By hand, or
  - Using the **front winch system**

- The front lid is secured for travel using the **winch**
- The rear lid is secured using **over-centre latches**, commonly mounted on or near the spare wheel frame once folded down

Despite size and securing differences, the **opening and closing sequence is identical** for both variants.

Plenty X: Setup Procedure

Step 1: Open the Front Lid First

Once the **boat rack is opened** and the **spare wheel frame is folded down**:

1. Release all **front lid over-centre latches**
2. Open the front lid **forward**
3. On new-body models, use the **front winch** if required to assist
4. Confirm the front lid is fully opened and supported

The front lid **must be opened first** to provide clearance for the rear lid.

Step 2: Open the Rear Folding Lid

With the front lid fully open and spare wheel frame deployed:

- Release the **rear lid over-centre latches**
- Fold the rear lid **outwards toward the rear**
- Guide the lid carefully and under control

Step 3: Latch the Rear Fold to the Spare Wheel Frame

Once the rear lid is fully deployed:

- Position the rear folding lid onto the **spare wheel support frame**
- Engage all rear fold latching points
- Confirm the rear fold is properly seated and fully supported by the spare wheel frame

The spare wheel frame now acts as the **primary rear bed support structure**.

Step 4: Continue Camper Setup

With both lids deployed and supported:

- Install internal poles as per the pole diagram
- Set up the main body tent
- Continue with bedding and interior setup
- Install the annex if required

From this point onward, the Plenty X operates in the same manner as other Hard Floor models.

Plenty X: Pack-Down Procedure

Pack-down must follow the **reverse order of setup**, without skipping steps.

Step 1: Interior and Canvas Preparation

Before folding any lids:

- Remove bedding and loose items
- Pack cushions according to correct height and placement guidelines
- Zip all canvas doors and windows closed

- Remove all removable internal poles
- Lower all U-shaped poles to their lowest, even position

Step 2: Release Rear Fold from Spare Wheel Frame

- Disengage rear fold latches from the spare wheel frame
- Confirm the rear folding lid is free to move

Step 3: Fold the Rear Lid First

The **rear lid must always be folded first**.

- Lift and fold the rear lid back onto the camper
- Actively observe canvas as it folds
- Ensure the lid seats flat and evenly

Step 4: Fold the Front Lid Second

Once the rear lid is fully folded:

- Lower the front lid over the rear lid
- On new-body models, use the **front winch** to control and secure the lid
- The front lid now holds the rear lid securely in place

Step 5: Secure for Travel

- Engage all **over-centre latches**
- Secure the front lid using the **winch**

- Fold the spare wheel frame back into its travel position
- Close and secure the boat rack

Perform a full walk-around inspection before towing.

Handling and Observation Notes

- Lid movement should always be smooth and controlled
- Resistance indicates incorrect sequencing or obstruction
- Canvas must be actively observed during all folding operations
- Never force lids, latches, or frames into position

IMPORTANT NOTICES

- Boat rack must be opened before any lid operation
- **Spare wheel frame must be folded down before opening or closing the rear fold**
- Rear folding lid **cannot clear the tyre** if the frame is upright
- Forcing the lid while the spare wheel is up will cause **severe damage**
- Front lid opens first during setup; rear lid opens second
- Rear lid folds first during pack-down; front lid folds second
- Both lids must be fully secured before travel
- Damage caused by incorrect sequencing may not be covered under warranty

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Air Conditioning – PLENTY X MODEL ONLY

Hard Floor Manual Disclaimer

The air conditioning system described in this section is fitted ***only to the new-body Austrack Plenty X Hard Floor camper****.*

Earlier Plenty X models and other Hard Floor campers are not equipped with this system.

Your Austrack camper may be fitted with a **Truma under-floor reverse-cycle air conditioning system**, purpose-built for use in caravans, campers, and hybrid campers where internal space efficiency, balanced weight distribution, and exterior durability are critical design requirements.

Unlike roof-mounted air conditioners, this system is mounted **beneath the camper floor** and distributes conditioned air internally via ducting. This design allows the camper roof to remain clear for other equipment, reduces overall vehicle height, and positions the air-conditioning mass low in the chassis for improved handling and stability.

The system is designed exclusively for **stationary operation while camping** and is intended to provide controlled interior comfort rather than rapid or extreme temperature correction.

System Type and Identification

The air conditioning system fitted to Austrack campers is the **Truma Saphir Comfort RC**, a **ducted, under-bunk / under-floor reverse-cycle air conditioning unit** designed specifically for mobile recreational vehicles.

This system provides:

- Active refrigeration-based cooling
- Reverse-cycle heat-pump heating
- Automatic dehumidification during cooling operation
- Internally ducted air delivery

The Saphir Comfort RC is a fully integrated climate control system engineered to operate reliably in compact living spaces under variable power and environmental conditions.

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Technical Specifications

Electrical and Performance Specifications

Specification	Value
Nominal Supply Voltage	230–240 V AC
Cooling Capacity	2.4 kW
Heating Capacity (Heat Pump)	1.7 kW
Typical Operating Current	Approximately 4–6 A
Compressor Start Load	Higher momentary draw (normal operation)
Operating Modes	Cooling, Heating, Automatic, Fan Only

Physical Characteristics

Specification	Value
System Type	Under-floor / under-bunk
Weight	Approx. 23.5 kg
Air Distribution	Ducted internal outlets
External Airflow	Intake and exhaust beneath camper
Recommended Camper Length	Up to approx. 6.5 m (dependent on insulation and layout)

Reverse Cycle Heating Function

The Truma system incorporates a **reverse-cycle heat pump**, allowing it to provide both cooling and heating from the same unit. In heating mode, the system extracts thermal energy from the outside air and transfers it into the camper interior.

Reverse-cycle heating characteristics should be clearly understood:

- Heating output is strongest in **mild to cool conditions**
- Performance reduces as ambient temperatures drop
- The system is intended to supplement comfort, not replace dedicated heaters in extreme cold

Heating operation is ideal for early mornings, evenings, and seasonal transitions where moderate warmth is required.

Normal Operating Conditions

For correct and reliable operation, the air conditioner must be used under the following conditions:

- The camper is **fully set up**
- The camper is connected to a **stable 240 V mains power supply**
- Canvas doors, windows, and openings are **fully zipped closed**
- Internal air outlets and return paths are unobstructed
- External under-floor vents are clear of obstructions

The system is **not designed to operate**:

- While driving or in transit
- While the camper is closed for transport
- Without adequate mains power
- With restricted airflow or ventilation

Attempting to operate the system outside of these conditions will result in reduced performance or protective shutdown.

Power Supply Behaviour and Limitations

The Truma under-floor air conditioner is sensitive to supply quality, as expected of a high-efficiency compressor-based system.

Normal Behaviour Under Limited Power

When connected to lower-capacity or shared campground power supplies:

- Cooling or heating performance may be reduced
- Compressor cycling may increase
- Start-up delays may occur

These behaviours are **intentional protective functions** designed to prevent damage to internal components.

Automatic Protection Logic

The system is equipped with internal safeguards that may:

- Prevent immediate restart after shutdown
- Interrupt operation during voltage instability
- Reduce output to protect the compressor

These actions indicate correct system protection, not a fault.

Airflow and Ventilation Requirements

External (Under-Floor) Airflow

Because the system exchanges heat externally:

- All external vents beneath the camper must remain clear
- Mud, dust, sand, grass, or debris must not block airflow

- No storage items, accessories, or protective covers may obstruct the unit

Restricted external airflow can cause overheating, reduced efficiency, or automatic shutdown.

Internal Airflow

Internally:

- Duct outlets must not be covered by bedding, cushions, or gear
- Return air paths must remain open
- Outlet airflow must be free to circulate through the living space

Obstructed airflow is one of the most common causes of poor performance.

Temperature Control and Performance Expectations

Air conditioning performance is influenced by:

- Ambient outdoor temperature
- Solar exposure
- Camper insulation
- Frequency of door and window opening
- Internal layout and airflow

Cooling Mode Expectations

- Cooling is **progressive rather than instantaneous**
- Dehumidification occurs automatically
- Best results are achieved with minimal door opening and good shading

Heating Mode Expectations

- Heating output increases gradually

- Most effective in moderate conditions
- Not intended for extended operation in severe cold

Condensation and Drainage

During cooling operation, moisture is removed from the internal air as part of the dehumidification process.

Important points:

- Condensate water drains **externally beneath the camper**
- Water dripping under the camper during cooling is **normal**
- No internal water discharge should occur

Owners must ensure external drain paths remain clear and unobstructed.

Controls and User Interaction

The system is typically operated using:

- A **Truma infrared remote control**, or
- A **Truma CP Plus digital control panel** (if fitted)

Control functions generally include:

- Mode selection (cool, heat, auto, fan)
- Temperature adjustment in 1 °C increments
- Fan speed selection
- Timer and quiet/night modes

Noise and Vibration Characteristics

The under-floor mounting position results in:

- Reduced interior noise compared to roof-mounted units
- Compressor noise primarily external
- Minimal vibration felt inside the living area

Fan noise levels vary depending on operating mode and airflow demand.

Normal System Behaviour

The following behaviours are normal and expected:

- Delayed compressor start after power-up
- Variations in fan speed during operation
- Intermittent shutdowns due to protection logic
- External condensate discharge

These do not indicate malfunction.

Troubleshooting – Owner Level Observations Only

System Will Not Start

- Confirm mains power is connected
- Check circuit protection
- Allow several minutes between restart attempts

Reduced Cooling or Heating

- Confirm camper is sealed
- Check airflow internally and beneath the camper

- Allow adequate stabilisation time

Unexpected Shutdown

- Check for power fluctuations
- Inspect ventilation
- Restart after a short delay

Error Codes Displayed

- Isolate power
- Wait 10 minutes
- Restore power and retry

Persistent errors require professional service.

Maintenance and Owner Responsibility

Owner responsibilities are limited to:

- Keeping airflow paths clear
- Inspecting under-floor areas after off-road travel
- Avoiding physical obstruction or impact
- Monitoring for abnormal noise or behaviour

No owner-performed internal servicing is permitted.

Storage and Non-Use Periods

During periods of non-use:

- Leave the system switched off
- Keep ventilation areas clear

- Do not cover the unit

Periodic inspection is recommended during long-term storage.

Relationship to Truma Documentation

This section provides **Austrack-specific guidance only**.

For full details covering:

- Fault codes
- Advanced control functions
- Servicing schedules
- Electrical protections

Refer to **official Truma Saphir Comfort RC documentation**.

IMPORTANT NOTICES

- Stationary use only
- Maintain all ventilation paths
- Do not operate while closed or in transit
- Use only with suitable mains power
- Do not obstruct airflow
- Servicing by qualified personnel only
- Misuse may not be covered under warranty

AUfocus Diesel Heater – PLENTY X MODEL ONLY

The Austrack Plenty X is fitted with an **AUFOCUS diesel heater**, designed to provide efficient, dry, and reliable space heating for cool to cold conditions. Diesel heaters are well suited to off-grid touring due to their low electrical demand, high thermal output, and ability to operate independently of LPG systems.

The AUFOCUS diesel heater draws fuel from a dedicated diesel supply and uses a controlled combustion process to heat air, which is then circulated into the caravan interior. Combustion gases are exhausted externally, meaning that only clean, heated air enters the living space when the system is operating correctly.

This section provides **complete operating instructions**, **setup guidance**, **error explanations**, and **maintenance requirements**, written specifically for Austrack owners. While the AUFOCUS heater itself is a manufacturer product, correct use and understanding of the control interface is critical to safe and effective operation.

General operating Principles

Before using the diesel heater, it is important to understand how the system behaves.

The AUFOCUS heater:

- Uses diesel fuel to generate heat
- Requires a stable electrical supply for startup and control
- Automatically runs a startup ignition cycle
- Automatically runs a cooldown cycle after shutdown
- Must never be force-powered off during combustion

Diesel heaters operate differently from LPG heaters. They are **not instant-on** devices, and they rely on correct startup, controlled burn, and proper shutdown to prevent carbon build-up, smoke, or component damage.

Powering the Heater On and Off

To turn the heater **on** or **off**, perform a **short press of the Power button** on the LCD control panel.

When powering on:

- The heater will begin a startup sequence
- The glow plug will ignite fuel in the combustion chamber
- Fan speed will gradually increase
- Warm air will begin to flow after ignition stabilises

When powering off:

- The heater will not shut down immediately
- The system will enter a **cool-down cycle**
- Fuel combustion stops
- The fan continues to run to cool internal components

⚠️ **Important:**
Never disconnect power during shutdown. Interrupting the cooling cycle can cause carbon build-up and excessive exhaust smoke.

Heating Modes – Manual Heat Mode vs Temperature Mode

The AUFOCUS heater features two operating modes. Understanding the difference between these modes is critical to using the system effectively.

To change between modes:

- Short-press the **round dial**
- Observe the display switching between **ROOM** and **SET**

Manual Heat Mode (ROOM)

Manual Heat Mode allows the heater to operate at a **constant output level**, independent of room temperature. This mode is best suited to:

- Very cold conditions
- Drying moisture inside the caravan
- Situations where constant heat is preferred

In this mode:

- Turning the dial increases or decreases output
- Levels range from **Level 1 to Level 10**
- The heater maintains a consistent fan speed and burn rate

This mode does not attempt to regulate temperature automatically.

Temperature Mode (SET)

Temperature Mode allows the heater to automatically regulate its output based on a **target room temperature**.

To use this mode:

- Turn the dial to set a temperature between **8 °C and 36 °C**
- Once selected, the set temperature flashes, then returns to current room temperature
- The heater will automatically adjust output

When the set temperature is reached:

- The heater steps down
- Fuel combustion stops
- The fan continues circulating air

When the temperature drops:

- The heater automatically reignites
- The cycle repeats

This mode is ideal for overnight use and maintaining comfort efficiently.

Accessing General Settings (F-Series)

To enter the general settings menu:

- Press and hold the **Settings** button
- Use the dial to scroll between options

F0 – Clock Settings

Displays the current time. The clock resets to **12:00** if power is disconnected.

To adjust:

- Press the dial to switch between hours and minutes
- Rotate the dial to change values

F1 / F2 / F3 – Timer Functions

These functions allow the heater to:

- Start automatically at a preset time
- Run for a preset duration
- Enable or disable timer control

These functions are useful for:

- Pre-warming the caravan
- Conserving fuel overnight

F4 – Language and Voice Settings

Allows selection of:

- English (E)
- Chinese (C)
- Russian (R)
- Voice prompts on or off

F5 – Room Temperature Calibration

The controller senses temperature locally, which may vary slightly from actual room temperature.

This setting allows calibration from **-9 °C to +9 °C** so displayed temperature more accurately matches perceived room conditions.

F6 – Fuel Tank Size and Level Display

Allows you to set tank capacity (5 L, 10 L, 15 L, etc.), enabling the system to estimate remaining fuel.

⚠ **Important:**
This function requires a reset **every time the tank is refilled**.

To reset fuel level:

- With the heater ON
- Press and hold **Fuel Level Reset** for 7 seconds

F7 – Pump Rate

Controls fuel delivery rate:

- AUFOCUS heaters are preset to **22U**
- This equates to 22 ml per 1,000 pump pulses
- This value **should not be adjusted** under normal operation

Advanced Settings and Diagnostic Information (EN-Series)

To access diagnostic information:

- With heater ON
- Press and hold **Settings**, then **Power**
- Release when display changes to **EN00**

This menu provides live system readings.

Key entries include:

- Software version
- Last recorded error
- Heater body temperature
- Supply voltage
- Current heat level
- Altitude reading
- Fuel priming
- Remote pairing
- Bluetooth password

Fuel Priming (EN07)

This function is critical after:

- First installation
- Running the heater dry
- Fuel line maintenance

When activated:

- The pump runs for 90 seconds
- Diesel is delivered to the heater
- Glow plug remains active
- The unit automatically ignites once fuel arrives

This process is safe and will not over-prime.

Error Codes and Fault Handling

AUFOCUS heaters will display error codes when faults are detected. These are safety systems designed to protect the heater and the caravan.

Common errors include:

- **E01 / E02 – Fuel delivery issues**
  Check fuel level, filter, lines, clamps, and pump operation.
- **E03 – Voltage fault**
  Ensure supply voltage is within:
  - 9–16 V (12V system)
  - 18–30 V (24V system)
- **E07 – Fan fault**
  Check fan rotation and wiring.

- **E08 – Ignition fault**
  Inspect glow plug seating and connection.
- **E09 / E010 – Overheat faults**
  Inspect air inlet, outlet, and exhaust clearance.

Maintenance and Monthly Operation

AUFOCUS diesel heaters require minimal maintenance but **regular operation**.

Austrack recommends:

- Running the heater on **high output for 15 minutes each month**
- Inspecting ducts for tight fittings
- Inspecting exhaust and muffler after road travel

Diesel heaters that sit unused for long periods may suffer from fuel degradation or carbon build-up.

Safety Warnings and Exhaust Considerations

⚠️ Diesel heater exhaust is **extremely hot**.

Critical safety rules:

- No flammable materials within **100 mm** of exhaust
- Exhaust must vent fully outside
- Heater must never operate without proper exhaust routing
- Allow full cooldown cycle on shutdown

Never modify the heater or replace components with non-AUFOCUS parts.

IMPORTANT NOTICE

Diesel heaters are combustion devices. Incorrect installation, interrupted shutdown cycles, voltage instability, or improper fuel use can result in faults, smoke, or component damage.

Austrack and AUFOCUS accept no responsibility for damage caused by misuse, modification, or operation outside the guidance provided in this manual.

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Electrical System

Your Austrack camper is equipped with an integrated **12-volt and 240-volt electrical system**, designed to provide reliable power for lighting, appliances, charging, and off-grid operation. The electrical system supports both campsite use and independent camping, with configuration varying depending on model and specification.

Austrack campers are fitted with one of two primary electrical system architectures:

- A **comprehensive power management system** (Renogy-based), or
- A **simplified mains-priority battery charging system**, designed for straightforward operation without advanced power management features

While both systems supply and manage electrical power safely and effectively, the way charging, monitoring, and solar input are handled differs between them. It is important to understand which system is fitted to your camper, as capabilities, controls, and user interaction will vary.

This section explains all electrical components fitted to your camper, including battery charging, solar input, 240-volt operation, and auxiliary inputs. Each subsection applies **only where the relevant equipment is fitted**.

Simple Battery Charging System

(Non-Renogy Configuration – Mains-Priority Electrical Architecture)

Certain Austrack campers are equipped with a **standardised, mains-priority electrical architecture** rather than a fully integrated power management system. This configuration is deliberately modular in design, relying on **discrete electrical subsystems**—each with a clearly defined function—rather than a single centralised control unit. The result is an electrical system that places a greater emphasis on **user awareness, manual system control, and predictable electrical behaviour** under a wide range of operating conditions.

This system architecture is commonly favoured where simplicity, serviceability, and electrical transparency are prioritised over automation. Rather than attempting to dynamically balance multiple charge sources through electronic logic, the system allows each charging input and output stage to operate independently, with the owner responsible for understanding which supply path is active at any given time.

Overall Electrical Architecture

The standard battery charging configuration employed in these campers is best described as a **segmented electrical system**, in which each major electrical function—charging, inversion, distribution, and auxiliary input—is handled by a dedicated component operating within defined

electrical boundaries. There is no cross-communication between subsystems beyond their shared connection to the battery bank.

This configuration removes automated source prioritisation in favour of **manual system engagement**, making electrical state changes clearly observable and mechanically deterministic rather than software-driven.

The principal components forming this architecture are as follows:

- A **Projecta-based 240 V AC mains battery charger**, operating as the primary charging device
- A **12 V DC battery bank**, serving as the central energy storage medium
- A **REDARC 1000 W pure sine wave inverter**, supplying limited AC power off-grid
- A **dedicated 240 V campground inlet**, electrically isolated from inverter output
- External **Anderson plug interfaces** for vehicle-based and photovoltaic charging inputs

Notably absent from this architecture are the following elements:

- Any form of centralised power management controller
- A permanently installed DC-DC charge converter
- An automatic transfer switch (ATS) or change-over relay

The absence of these components is a **deliberate design decision**, not an omission.

Battery Charging Methodologies

In this electrical architecture, battery charging is not governed by a single control logic but rather achieved through **three physically separate charging pathways**, each dependent on its own connection method, voltage characteristics, and operational constraints. Understanding how each pathway functions—and under what conditions it is most effective—is essential for correct system operation.

240 V Mains Battery Charging (Primary Charging Circuit)

When connected to external 240 V AC power, the camper's electrical inlet provides supply **exclusively to the onboard Projecta battery charger**. There is no intermediary distribution stage, no power sharing with inverter circuits, and no direct energisation of general-purpose 240 V outlets.

In this configuration, the system operates purely as an **AC-to-DC conversion and charging circuit**, with all AC energy being consumed for battery replenishment.

The mains charging behaviour is characterised as follows:

- 240 V AC power enters the camper via the dedicated inlet
- Supply is routed directly to the Projecta charger
- The charger manages charge stages internally using its own control logic
- Maximum charging output is capped at **25 amps DC**
- No automatic back-feed to inverter circuits occurs

This approach ensures electrical isolation between AC charging infrastructure and inverter supply paths, eliminating any possibility of unintended power crossover.

Tow Vehicle Charging via Anderson Interface

Although a fixed DC-DC charging device is not included in this system, the camper battery **can still accept charge from the tow vehicle** through direct DC coupling using the Anderson connector. This method relies entirely on the electrical behaviour of the vehicle's alternator and associated charging hardware.

In effect, this charging path operates as a **parallel DC supply connection**, with no voltage conditioning occurring within the camper itself.

The effectiveness of this charging path is wholly dependent on alternator design.

Vehicles with Conventional Alternator Systems

Vehicles equipped with **fixed-output, non-adaptive alternators** typically provide a stable and continuous charging voltage whenever the engine is running. In these systems, alternator output is maintained independently of vehicle load monitoring algorithms.

When paired with an appropriately installed **Voltage Sensitive Relay (VSR)**, these vehicles are capable of delivering consistent charging current to the camper battery while driving.

Key traits of this configuration include:

- Continuous charging voltage while engine is running
- Predictable charge behaviour during travel
- No dynamic voltage reduction under normal conditions

This arrangement is generally sufficient for maintaining battery charge during transit.

Vehicles with Smart or Variable Voltage Alternators

Modern vehicles increasingly utilise **smart alternator systems**, which dynamically adjust output voltage in response to vehicle demand, emission reduction strategies, and energy-saving algorithms. These systems frequently reduce alternator output once the vehicle's own battery reaches a predetermined state of charge.

When coupled directly to a camper battery via an Anderson plug, this behaviour can result in **intermittent, insufficient, or entirely absent charging**.

For these vehicles, the installation of a **DC-DC charger** is not merely beneficial but strongly advised, as it conditions the variable alternator output into a stable charging voltage suitable for auxiliary batteries.

DC-DC chargers must be installed by qualified personnel and are outside the scope of this manual.

Solar Charging via External Photovoltaic Source

Photovoltaic charging within the standard electrical system is achieved through the use of a **portable, externally regulated solar blanket**, supplied by Austrack as part of the camper's standard equipment.

Solar input is delivered to the system **exclusively through the rear Anderson plug**, maintaining consistency with vehicle charging interfaces and reducing connector complexity.

The AusTuff solar blanket performs all voltage regulation externally before energy enters the camper's electrical system, effectively treating solar input as a pre-conditioned DC supply rather than raw panel output.

Solar Regulation Requirements

Because no onboard solar regulation circuitry exists within this system, it is absolutely critical that **all photovoltaic input be regulated prior to connection**.

This requirement exists to prevent uncontrolled charging voltages from reaching the battery bank.

The following rules must always be observed:

- External solar input **must be regulated**
- The AusTuff blanket's integrated regulator **must remain active**
- Unregulated panels must never be connected directly

Failure to comply may result in battery damage or system instability.

Inverter System (REDARC)

The standard electrical configuration includes a **REDARC 1000 W inverter**, providing limited 240 V AC capability when operating independently of campsite power.

This inverter forms a separate electrical domain within the camper, converting stored battery energy into usable alternating current on demand.

Inverter Function and Electrical Role

The inverter operates by:

- Drawing DC energy from the 12 V battery bank
- Converting it into regulated 240 V AC output
- Supplying selected 240 V outlets within the camper

The inverter is designed for **intermittent, low-to-moderate load applications**, not sustained high-draw usage.

Manual Inverter Engagement (Critical System Behaviour)

This electrical system **does not incorporate any automatic source-selection or transfer relay**. As such, inverter operation is entirely manual.

This results in the following operational characteristics:

- The REDARC inverter **must be manually switched on** to energise AC outlets when off-grid

- The presence of 240 V mains power does **not automatically disable or enable** the inverter
- The system cannot automatically distinguish between AC supply sources

This deliberate separation prevents unintended electrical interactions but requires ongoing user awareness.

Inverter Capacity and Load Constraints

The inverter is limited to **1000 watts continuous output**.

Operational considerations include:

- High-draw appliances may exceed inverter capacity
- Over-current or low-voltage conditions trigger protective shutdown
- Battery depth of discharge directly affects inverter runtime

Inverter usage must be actively managed to preserve battery health.

12 V Distribution System

The 12-volt DC distribution network within the camper operates continuously and independently of inverter or mains charging states. All primary camper utilities draw energy directly from the battery bank.

This system supplies:

- Internal and external LED lighting
- Water pump
- USB charging ports
- Auxiliary 12 V sockets
- Control circuits for fitted accessories

The battery remains the sole supply source for all 12 V loads at all times.

240 V System Behaviour and Separation

In this configuration, **two entirely separate 240-volt domains exist**, with no automatic bridging between them.

These domains operate as follows:

Mains Charging Domain

- Activated only when external 240 V is connected
- Supplies the Projecta charger exclusively
- Charges the battery at up to **25 A**

Inverter Supply Domain

- Activated only when the inverter is manually engaged
- Supplies selected outlets from battery power
- Limited by inverter and battery capacity

Understanding this separation is critical to correct and safe system operation.

Monitoring, Feedback, and User Awareness

This system intentionally omits any form of digital energy monitoring, state-of-charge display, or automated load management interface.

As a result, system status must be inferred through:

- Observed electrical behaviour
- Projecta Charger indicator screen
- Appliance performance
- User operational discipline

This design philosophy trades automation for reliability and simplicity.

Intended Limitations and Design Philosophy

Compared to integrated power management systems, this configuration:

- Eliminates automated source prioritisation
- Requires manual inverter control
- Relies on external regulation for solar
- Provides no digitally displayed diagnostics except for current voltage

These characteristics are fundamental to the system's design and should be viewed as operational traits, not deficiencies.

IMPORTANT NOTICES

- No onboard DC-DC charger is fitted as standard
- Vehicle charging behaviour depends on alternator design
- DC-DC chargers are recommended for smart alternator vehicles
- Solar input must be externally regulated
- The inverter must be manually switched on to supply 240 V outlets
- Maximum mains charging output is **25 amps**
- The inverter fitted is a **REDARC 1000 W unit**
- Incorrect system use may result in damage not covered under warranty

RENOGY SYSTEM

The **Renogy Electrical System** section contained within this manual is largely identical to the Renogy section used in the Austrack **Hybrid Owners Manual**, as the same core Renogy components and system architecture are used across both ranges.

For Austrack Hard Floor models, there are some **intentional configuration differences** owners should be aware of:

- Most Hard Floor models **do not include a separate solar regulator**, by design
- This is because Austrack supplies an **AusTuff solar blanket**, which incorporates its **own integrated solar regulator**
- When using the AusTuff solar blanket on these models, solar input is regulated at the blanket and supplied safely to the camper without the need for an additional onboard regulator

Some Hard Floor models may be fitted with a **dedicated onboard solar regulator**. Where this is the case:

- The **solar blanket's built-in regulator must NOT be used**

- The solar blanket must be connected **without its regulator active**, allowing the onboard regulator to manage solar input
- Using two regulators in series may cause charging faults or reduce system performance

Hard Floor models operate via the **Renogy VISION control panel**. A separate VISION display screen is **not fitted**.

Owners must always refer to the physical components installed in their camper and the relevant sections of this manual to determine the correct solar connection method for their specific configuration.

Some Austrack caravans are fitted with a **RENOGY-based electrical system**, incorporating the RENOGY ONE ecosystem, distributed charging components, battery monitoring hardware, and digital control interfaces. This system is designed to provide detailed insight into energy production, storage, and consumption through a combination of hardware, software, and user interaction.

Unlike electrical systems that operate primarily through background automation, the RENOGY system places significant emphasis on **active user involvement**, **system configuration**, and **interface management**. Correct operation relies not only on physical installation but also on correct pairing, software state, and precise configuration of multiple independent system elements.

This means that while the RENOGY system is capable of presenting a wide range of electrical information, achieving accurate and predictable behaviour requires owners to understand how each component interacts with the others, and how system behaviour may change based on settings, charging conditions, and connectivity.

General System Philosophy and Design Approach

The RENOGY system is best understood as a **modular digital electrical environment**, rather than a single integrated controller. Each major function — charging, monitoring, display, and control — is handled by a separate device that communicates electronically with the others.

This design approach offers flexibility and configurability, but also introduces multiple dependencies. System accuracy and stability depend on:

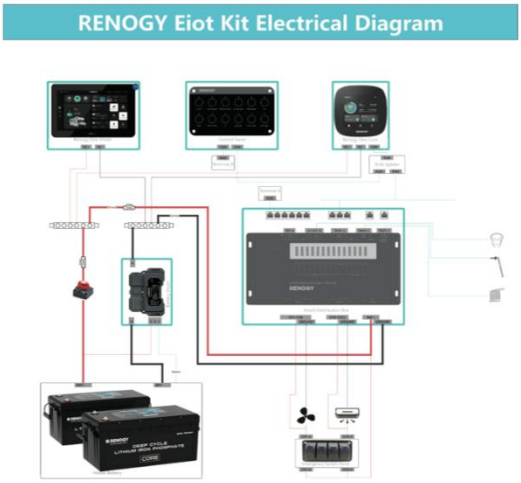
- Correct device pairing
- Consistent network connectivity
- Proper shunt configuration

- Accurate battery capacity data
- Appropriate charging profile selection
- Ongoing verification of system state after changes

Because of this, owners may need to regularly review system settings to ensure displayed data accurately reflects real-world battery and charging behaviour.

RENOGY System Components and Relationships

A typical RENOGY electrical installation in an Austrack caravan may consist of the following interconnected components:



- **RENOGY ONE Core display module**
- **RENOGY ONE Vision touchscreen module**
- **Battery shunt (RENOGY RSHST series)**
- **RENOGY DC/DC charger**
- **RENOGY inverter (where fitted)**
- **Mobile device running the RENOGY App**

Each of these components performs a specific role and relies on communication with others in order to present meaningful information or allow user control.

Failure or misconfiguration of any one component can affect system-wide behaviour, even if other components remain operational

Renogy ONE Core – System Control Hub

The **RENOGY ONE Core** acts as the primary configuration and monitoring hub for the system. It is responsible for displaying battery data, system status, and charging information derived from other connected components.

The Core does not directly manage charging hardware; instead, it **interprets data provided by**:

- The battery shunt

- The DC/DC charger
- Solar inputs
- Inverter status

Because of this, the accuracy of the information displayed on the Core is dependent on:

- Proper shunt calibration
- Correct battery capacity input
- Consistent communication with connected devices

The Core also manages system network functions, including WLAN connectivity and hotspot broadcasting.

RENOGY ONE Vision – User Interface Extension

Where fitted, the **RENOGY ONE Vision** provides a secondary touchscreen interface designed for direct interaction with system controls and loads.

The Vision screen allows:

- Visualisation of power flow
- Control of DC outputs
- Navigation between system overview pages

- Access to pairing and hotspot menus

The Vision screen does not replace the Core; rather, it operates as an **additional interface layer**, and must be correctly paired with the Core to function as intended.

Because the Vision relies on internal wireless communication, its behaviour may be affected by:

- Network state
- Software synchronisation
- Initial startup sequence

Core ↔ Vision Wireless Interconnection

When both a RENOGY ONE Core and Vision are installed, they must be connected to each other using WLAN.

This internal wireless link allows:

- Shared system data
- Mirrored control states
- Unified system snapshots

The connection is established manually by selecting the Vision network from within the Core's WLAN menu. Once connected, the two devices must remain within operational wireless range to maintain synchronisation.

System Ownership Expectations

Because the RENOGY electrical system distributes responsibility across hardware, displays, and software, owners should expect to:

- Spend time navigating multiple menus
- Verify system configuration after changes
- Confirm displayed metrics periodically

- Understand that displayed data reflects calculated values, not direct measurements
- Recognise that behaviour may vary depending on system state

This is normal behaviour within a digitally managed electrical environment.

Service and Professional Support

Due to the configurational nature of the RENOGY system, diagnosing concerns may require reviewing both hardware condition and software settings.

For any issues relating to:

- Inconsistent readings
- Charging behaviour
- Connectivity problems
- Unexpected system responses

Austrack recommends contacting AOE RV Service Centre as the primary point of support, as they are familiar with Austrack installations and RENOGY system layouts.

If AOE RV Service Centre is not accessible due to geographic location, owners should seek assistance from a suitably qualified caravan or RV service technician experienced with RENOGY systems.

RENOGY Mobile Application – Extended Interaction Layer

The RENOGY mobile application provides yet another interface layer through which the user can view system data and issue commands.

The application allows:

- Monitoring of battery state of charge

- Viewing of charging inputs
- Control of selected loads
- Access to system configuration menus

However, the mobile application does not function independently. It requires:

- Prior successful pairing with the Core or Vision
- Correct network conditions
- Active user account login
- Proper app permissions

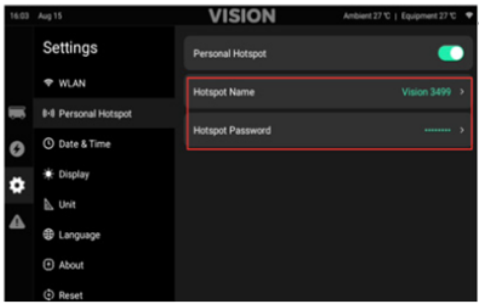
Because the application operates through wireless communication, its responsiveness and accuracy may vary depending on connectivity and software state.

Network Behaviour and Dependency Awareness

A key aspect of the RENOGY system is its reliance on **temporary local Wi-Fi networks** during initial setup and pairing.

During pairing:

- The RENOGY device broadcasts a local hotspot
- The user's phone must disconnect from normal internet access
- Mobile data must be disabled manually
- WLAN and hotspot modes must not conflict



Failure to perform these steps in the correct order may prevent pairing or result in incomplete device registration.

This requirement exists because many mobile devices will prioritise cellular data over local Wi-Fi networks, preventing proper communication between the app and the RENOGY hardware.

Initial Pairing – Vision Screen to Mobile Device

Pairing a mobile device with the RENOGY electrical system is a **multi-stage process** that relies on correct network selection, temporary changes to your phone's connectivity settings, and QR-code-based authentication. The RENOGY system does not use your normal home or mobile internet connection during initial setup. Instead, it creates a **temporary local Wi-Fi hotspot** that must be joined manually.

Correct pairing depends heavily on completing each step **in the correct order**. Skipping steps, enabling conflicting network settings, or leaving mobile data enabled during pairing may prevent successful connection.

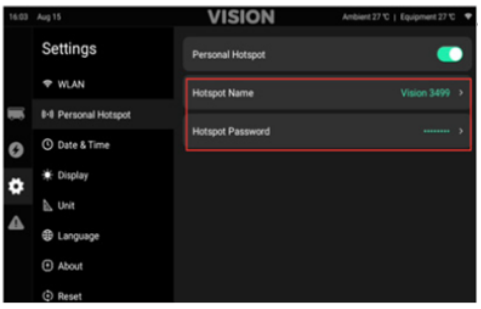
Step-by-Step Pairing Procedure

(RENOGY ONE Vision → Mobile Phone)

Step 1 – Enable Personal Hotspot on the RENOGY ONE Vision

On the RENOGY ONE Vision screen:

1. Tap the **Settings (Cog Wheel)** icon (third button down on the left-hand side of the screen).
2. Select **Personal Hotspot**.
3. Ensure the **Personal Hotspot switch is turned ON**.



⚠️ **Important:**
Do **NOT** turn on **WLAN** at this stage. Enabling WLAN will automatically disable the Personal Hotspot and prevent pairing.

Take note of:

- **Hotspot Name**
- **Hotspot Password** (commonly set to 12345678 unless changed)

Step 2 – Prepare Your Phone for Initial Connection

On your mobile phone:

1. **Disable Mobile Data**
   This is critical, as mobile data signals are typically stronger than the Vision's Wi-Fi signal and may block the connection process.
2. Open your phone's **Wi-Fi settings**.
3. Locate the hotspot broadcast by the RENOGY ONE Vision (e.g. *VISION-000##*).
4. Connect to the hotspot using the password shown on the Vision screen.

Your phone is now directly connected to the Vision screen via local Wi-Fi only.

Step 3 – Open the RENOGY Mobile App

Once connected to the Vision hotspot:

1. Open the **RENOGY App** on your phone.
2. If prompted, log in to your RENOGY account or complete account setup.

Step 4 – Add a New Device in the App

Within the RENOGY App:

1. Tap the **"+" (Add Device)** icon in the top-right corner of the app.
2. Select **Scan QR Code**.

The app is now waiting for a QR code from the RENOGY system.

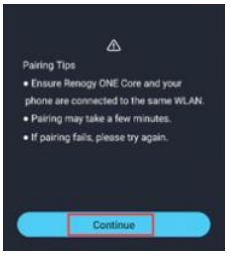
Step 5 – Display the QR Code on the RENOGY ONE Vision

On the RENOGY ONE Vision screen:

1. Tap the **System Wheel** (bottom-right corner of the screen).
2. Tap the **System Box** to expand the menu.
3. Scroll down and select **Pair with App** (approximately three-quarters of the way down).

The Vision screen will now display a QR code.

Step 6 – Scan the QR Code Using Your Phone



1. Hold your phone steady and allow the RENOGY App to scan the QR code displayed on the Vision screen.
2. Once scanned, tap **Continue** in the app.
3. Follow any on-screen prompts.

Step 7 – Confirm Successful Pairing

If pairing is successful:

- The app will display a **"Paired Successfully"** confirmation screen.

Tap **Done** to complete the process.

Step 8 – Finalise the Connection

To complete pairing:

1. **Close the RENOGY App completely** (do not leave it running in the background).
2. Re-open the app.
3. Confirm that system data and controls are now visible.
4. **Re-enable Mobile Data** on your phone.

The RENOGY App is now paired with your caravan's electrical system.

After Pairing – What Should Work

Once pairing is complete, you should be able to:

- View battery and charging information
- Monitor solar and vehicle charging inputs
- Control DC loads mapped to the Vision system
- Access system snapshots and status information

Controls can now be accessed via:

- The RENOGY ONE Vision screen
- The RENOGY mobile app

Important Notes and Common Pairing Issues

- Pairing **must** be done using the Personal Hotspot, not WLAN
- Mobile data **must be disabled** during initial pairing
- WLAN and Personal Hotspot cannot be active simultaneously
- Closing and reopening the app is required to stabilise the connection
- If pairing fails, restart the process from Step 1

If repeated pairing attempts fail or behaviour appears inconsistent, **Austrack recommends contacting AOE RV Service Centre as the primary point of support**. If AOE RV Service Centre is not accessible, assistance should be sought from a suitably qualified caravan or RV service technician familiar with RENOGY systems.

Battery Monitoring Fundamentals within the RENOGY Ecosystem

Within the RENOGY electrical system, battery monitoring is not derived directly from the battery itself, but instead relies on **interpretation of current flow data** via a **separate external battery shunt**. This shunt functions as the primary data source for calculating battery State of Charge (SOC), voltage trends, and historical energy usage.

It is important to understand that the RENOGY system does **not** inherently "know" the condition of the batteries. Instead, it performs calculations based on:

- User-entered battery capacity values
- Measured current flowing into and out of the battery
- Voltage thresholds
- Historical charge and discharge behaviour

As a result, the accuracy of all battery-related data depends heavily on **correct initial configuration** and **ongoing calibration discipline**.

RENOGY Battery Shunt – Role and Limitations

The RENOGY battery shunt acts as a current-sensing device that tracks all electrical flow into and out of the battery bank. In Austrack installations, this is commonly listed in the system as a device identifier such as:

RSHST-B02P300-G1

The shunt itself does not store energy, control charging, or regulate battery behaviour. Its sole purpose is data collection, which is then interpreted by the RENOGY ONE Core and Vision interfaces.

Because the shunt is passive and calculation-based:

- Any incorrect capacity input will scale SOC values inaccurately
- Any wiring imbalance can skew measurements
- Any load that bypasses the shunt will not be reflected in system data

Manual Entry of Battery Capacity – A Required Step

Unlike systems that automatically recognise battery chemistry and capacity, the RENOGY system requires **manual input of total battery capacity**. This step is critical and directly affects:

- SOC percentages
- Remaining runtime estimates
- Charge acceptance calculations
- Alarm thresholds

Battery capacity must be entered via the system design menus accessed through the RENOGY ONE Core interface.

If capacity is:

- Entered incorrectly
- Not entered at all
- Adjusted without recalibration

then the battery data presented across all interfaces may become progressively less reliable over time.

State of Charge (SOC) Calculation Behaviour

SOC within the RENOGY system is a **derived value**, not a direct measurement. It is calculated based on cumulative amp-hours in versus amp-hours out, starting from a reference point that must be defined by the user.

This reference point is established through **SOC calibration**, which typically requires a full battery charge cycle.

Until this calibration has been correctly completed:

- SOC values may fluctuate unexpectedly
- Displayed percentages may not correspond to actual usable capacity
- System behaviour tied to SOC thresholds may not perform as intended

SOC accuracy degrades further if:

- Batteries are only partially recharged for extended periods
- Inverter loads are heavy and irregular
- Solar input varies significantly day-to-day

SOC Source Selection – Internal vs External Logic

Within the RENOGY system menus, the user must explicitly select the **SOC source**. This selection determines whether SOC calculations are derived from:

- Internal battery logic (used by some RENOGY batteries)
- External battery shunt only

In Austrack installations not using RENOGY-branded batteries with internal shunts, this setting must be configured to **“From Battery Shunt Only.”**

Failure to configure this correctly may result in:

- Conflicting SOC values

- Unstable charge percentage reporting
- Unexpected behaviour during charging or discharge events

This setting is not auto-detected and must be manually confirmed.

Full Charge Calibration – Why It Matters

A **full charge calibration** is required to synchronise the calculated SOC with actual battery capacity. This occurs when:

- Batteries reach 100% charge under controlled conditions
- Charging current tapers appropriately
- The system is allowed to complete its charging algorithm uninterrupted

For best results, this calibration should be performed:

- While connected to stable 240 V mains power
- With minimal load activity
- After SOC and capacity settings are verified

Skipping this step or performing it under fluctuating conditions may lock inaccurate reference data into the system.

RENOGY Inverter Interaction with Battery Logic

Where a RENOGY inverter is installed, it introduces a significant load source that directly affects battery behaviour and SOC calculation.

Inverter operation requires:

- Correct REM mode selection at the inverter
- Correct frequency (50 Hz for Australia)
- Adequate battery discharge capability

High inverter loads will:

- Rapidly draw current through the shunt

- Cause visible voltage sag
- Influence SOC calculation accuracy if calibration is incomplete

Battery Discharge vs Battery Capacity

In inverter-based systems, **discharge capability** is often more critical than total capacity.

RENOGY systems do not automatically enforce inverter-to-battery suitability. Owners must ensure that:

- Battery discharge ratings are sufficient for inverter demand
- Parallel battery configurations are balanced
- Wiring resistance is minimised

SOC values alone do not indicate whether the system can sustain high-load inverter operation.

Battery Discharge Depth and Longevity

While lithium batteries allow deeper discharge than older chemistries, RENOGY system users are encouraged to manage depth of discharge proactively.

General guidance recommends:

- Avoiding discharge below **20% SOC**
- Recharging promptly after heavy usage
- Avoiding repeated deep-discharge cycles

Although battery protection systems may prevent complete depletion, reliance on these protections as a routine operating condition is not recommended.

Behaviour Under Heavy Load

During high-load events (e.g. heating appliances, cooking devices, or air conditioning where supported), owners may observe:

- Rapid drops in displayed SOC
- Alarms triggered by voltage sag
- Increased charger activity following load removal

These behaviours are expected within the RENOGY system and must be interpreted in context with battery configuration and charging availability.

RENOGY DC/DC Charger – Behavioural Overview

Austrack caravans fitted with RENOGY systems utilise a **RENOGY RBC50D1S-AU DC/DC charger**, designed to manage charging from the tow vehicle alternator and solar input.

The light indicators on the RBC50D1S-AU are as follows (from left to right)

1. *Light indicator shows charge from your alternator when connected to your car*
2. *Light indicator shows solar when panels connected and receiving over 15V*
3. *Light indicator shows battery charging (Yellow means charging, Green means fully charged)*
4. *Blue light indicates Lithium Battery is connected. This will be a different colour for different battery chemistries (eg, AGM, Gel etc)*

This unit does not charge batteries continuously at a fixed rate. Instead, it operates within a **conditional logic framework** that prioritises and balances available inputs based on voltage thresholds and configured profiles.

DC/DC Charging Logic While Driving

When the caravan is connected to the tow vehicle and in motion:

- Alternator input becomes available
- The DC/DC charger monitors system voltage
- Charging current is progressively applied up to rated capacity

If solar panels are also connected:

- Solar contribution is evaluated first
- When solar output reaches approximately **25 amps or greater**, alternator charging is reduced or paused
- Below this threshold, solar and alternator inputs may be combined

This behaviour is dynamic and may change continuously while driving depending on:

- Sun angle
- Panel shading
- Vehicle speed
- Alternator output characteristics

DC/DC Charging at Night or Without Solar

If:

- Driving occurs at night
- Solar panels are disconnected
- Solar output is insufficient

then the DC/DC charger will default to supplying up to **50 amps** from the vehicle alternator, subject to battery acceptance limits and charge stage.

Charging will reduce automatically as batteries approach their absorption or float stages.

DC/DC Charger Indicator Interpretation

The RENOGY DC/DC charger uses multiple indicator lights to communicate operating status. These lights must be interpreted correctly to understand charging behaviour.

Indicators typically represent:

- Alternator input presence
- Solar input presence
- Battery charging state

- Battery chemistry selection

Because these indicators do not display numerical values, owners must rely on **combined interpretation** of:

- Charger LEDs
- RENOGY ONE display data
- Mobile app metrics

Understanding charger state therefore requires cross-checking multiple interfaces.

Summary of User Responsibility in Battery Management

Due to the calculation based nature of the RENOGY battery monitoring system, owners are responsible for:

- Correct initial configuration
- Periodic verification of capacity and SOC settings
- Understanding that displayed values are estimates
- Recognising the limitations of calculated SOC
- Avoiding reliance on a single data point

Accurate system operation depends on informed ownership.

Solar Input within the RENOGY System – General Characteristics

Solar charging within the RENOGY electrical system is highly dependent on environmental conditions, system wiring configuration, and regulator logic. Unlike fixed-output charging sources, solar input is inherently variable and must be interpreted within the context of real-world conditions rather than nominal panel ratings.

RENOGY systems typically integrate solar charging through one of two pathways:

- Via the DC/DC charger's internal solar regulator
- Via a standalone RENOGY solar regulator

In either case, solar input is subject to prioritisation rules that influence how charging current is distributed across available inputs.

Real World Solar Expectations

Although solar panels are rated under standard test conditions, actual output during use varies significantly. Under ideal conditions, most caravan-sized panels typically generate **approximately 9–11 amps per panel**, but sustained output at these levels is rarely achieved.

Factors affecting solar performance include:

- Angle of sunlight
- Time of day
- Geographic latitude
- Seasonal variation
- Weather conditions
- Panel cleanliness
- Partial shading
- Cable length and conductor size

The RENOGY system does not normalise solar output based on these variables; instead, it reports instantaneous conditions that must be interpreted by the user.

Solar Priority Logic in Combined Charging Scenarios

When a RENOGY DC/DC charger with integrated solar regulation is used, the system follows a conditional priority logic.

While driving:

- Solar input is evaluated continuously
- Once solar current reaches a defined threshold (commonly around 25 A), alternator contribution may be reduced or suspended
- Below this threshold, alternator and solar inputs may be combined

This behaviour is dynamic and subject to frequent transition as conditions change. As a result, displayed charging values may fluctuate rapidly, particularly when driving in intermittent shade or variable weather.

External Solar Blankets and Regulator Interaction

When using **external portable solar blankets** with a RENOGY-equipped Austrack caravan, additional consideration is required due to differences between RENOGY's general system recommendations and Austrack's specific electrical design.

External solar blankets commonly include:

- Integrated solar regulators
- Long extension leads
- Panels designed for manual repositioning and orientation adjustment

In a typical RENOGY system configuration where an external solar connection is wired **directly to the RENOGY solar input**, RENOGY recommends that any regulator supplied with a portable solar blanket be **bypassed**. This is because the RENOGY system expects to manage solar regulation internally, and the presence of multiple regulators in series can result in:

- Regulator conflict
- Reduced charging efficiency
- Input voltage levels too low to trigger charging logic
- Inconsistent or absent solar input readings on the display

However, **Austrack caravans are configured differently**.

Austrack Rear Anderson Plug – Design Intent

In Austrack installations using the RENOGY electrical system, the **rear Anderson plug is not wired to the RENOGY solar input**. Instead, the rear Anderson plug is connected **directly to the battery system**, bypassing the RENOGY solar regulation pathway entirely.

This design choice allows the rear Anderson plug to function as a **dual-purpose input/output connection**, enabling:

- Connection of regulated portable solar blankets

- Connection of external charging sources
- Flexible power exchange without altering internal system configuration

Because the Anderson plug is connected directly to the batteries, **any external solar source connected at this point must retain its own regulator**. In this configuration, the regulator supplied with the portable solar blanket **must not be bypassed**, as it is responsible for ensuring safe and appropriate charge voltage to the battery bank.

Important Operational Clarification

- RENOGY's recommendation to bypass external regulators applies **only** when connecting solar panels directly to a RENOGY-controlled solar input.
- Austrack's rear Anderson plug is **not** a RENOGY solar input.
- External solar connected via the rear Anderson plug **must remain regulated at the source**.
- Solar input connected this way may **not be fully visible or interpreted** by the RENOGY system in the same manner as internally regulated rooftop solar.

Owners should be aware that this is an intentional and considered design choice by Austrack and does not indicate incorrect system operation.

Owner Awareness Note

Because charging via the rear Anderson plug occurs **outside the RENOGY solar regulation path**, the RENOGY display may not always accurately reflect the contribution of portable solar blankets connected in this manner. This is expected behaviour and does not indicate a fault or misconfiguration.

Understanding the distinction between **RENOGY-managed solar inputs** and **Austrack-managed battery inputs** is essential for correct interpretation of system behaviour.

Voltage Drop and Wiring Loss Considerations

Solar energy is particularly sensitive to wiring length and conductor size. In RENOGY systems:

- Longer cable runs increase resistance
- Resistance reduces available charging voltage

- Reduced voltage may prevent charging activation

This is especially relevant when:

- Panels are roof-mounted with long cable runs
- External blankets are used with extended leads
- Multiple connection points are involved

The system does not compensate automatically for voltage drop, requiring manual assessment if charging performance appears reduced.

Battery Expansion – Compatibility and Uniformity Requirements

If additional lithium batteries are added to a RENOGY-equipped system, strict compatibility guidelines must be followed to prevent imbalance and premature degradation.

Best practice requires that additional batteries:

- Are of the **same brand**
- Have the **same capacity**
- Use the **same cell chemistry**
- Are manufactured within a similar timeframe

Mixing batteries of different capacities or ages can result in unequal charging and discharging, impacting system behaviour and long-term reliability.

Parallel Battery Wiring and Load Distribution

In parallel battery configurations, wiring layout has a direct impact on how current is shared.

Correct practice dictates:

- Positive connection taken from one end of the battery bank
- Negative connection taken from the opposite end
- Equal-length conductors where possible

This arrangement helps ensure balanced charge and discharge across all batteries. Incorrect wiring may cause certain batteries to work harder than others, distorting SOC calculations and reducing lifespan.

Inverter Sizing and Discharge Capability

Inverter performance within the RENOGY system is tied not only to inverter wattage rating but also to **battery discharge capability**.

Indicative discharge requirements include:

- 2000 W inverter → ~175–200 A discharge
- 3000 W inverter → ~250–300 A discharge

Battery capacity alone does not guarantee adequate discharge performance. Total system discharge must account for:

- Battery internal resistance
- Parallel battery count
- Wiring losses
- Temperature effects

RENOGY systems do not automatically enforce inverter-to-battery suitability

Simultaneous Appliance Load Behaviour

When multiple 240 V appliances are used simultaneously:

- Inverter load increases cumulatively
- Battery discharge demand escalates rapidly
- Voltage sag may occur
- Protective alarms may activate

These effects are normal within high-load scenarios and reflect system limits rather than faults

Alarm Behaviour and Breaker Operation

Inverter alarms serve as warnings of approaching operational limits. These may indicate:

- Low battery voltage
- Excessive load
- Thermal stress

Ignoring alarms may result in:

- Inverter shutdown
- Tripped breakers
- Loss of 240 V supply

Although alarms can sometimes be disabled, this does not remove the underlying system constraints.

System Scalability Considerations

The RENOGY system offers multiple pathways for expansion and modification; however, each change introduces additional complexity.

Common scaling considerations include:

- Wiring upgrades for higher current
- Shunt recalibration after capacity changes
- Reconfiguration of SOC settings
- Increased monitoring requirements

The system does not auto-reconfigure after hardware changes.

Interpretation of Displayed Data

All values displayed in the RENOGY environment represent interpreted information derived from multiple inputs. Users should be aware that:

- Displayed values are not direct measurements of remaining energy
- SOC is an estimate

- Charging currents reflect instantaneous conditions only

Cross-checking information across interfaces may be necessary to understand system behaviour accurately.

"End Consumer Awareness" – Practical Responsibility

Owners should be aware that:

- The RENOGY system rewards attentive configuration
- Behaviour may differ after updates or resets
- Discrepancies may arise without calibration
- Understanding system logic improves outcomes

Time spent familiarising oneself with menus, settings, and system interactions is considered part of normal ownership.

Service, Review, and Ongoing Support

Due to the configurational and software-dependent nature of the RENOGY system, addressing concerns may require methodical review rather than component replacement.

For assistance with:

- Charging inconsistency
- Battery reporting anomalies
- Pairing or connectivity concerns
- System expansion review

Austrack recommends contacting AOE RV Service Centre as the primary point of support, as they are familiar with Austrack electrical installations and RENOGY architectures.

If AOE RV Service Centre is not geographically accessible, owners should seek assistance from a suitably qualified caravan or RV service technician experienced with RENOGY systems.

IMPORTANT NOTICE

The RENOGY electrical system relies on correct configuration, active monitoring, and user awareness. Variations in behaviour may occur due to environmental conditions, system settings, and connectivity state. Incomplete configuration or misunderstanding of system logic may result in inaccurate information or reduced system performance.

Owners are encouraged to review this section in full and consult professional support when required.

System State Awareness and Operational Context

The RENOGY electrical system operates within a continuously changing operational context. Unlike systems that function independently once installed, RENOGY requires periodic awareness of **system state**, which is influenced by variables such as:

- Active charging sources
- Network connectivity
- User-defined configuration settings
- Software state across display modules
- Load demand and discharge rate

As a result, the same user action may lead to different system responses depending on prevailing conditions. Owners should not assume that system behaviour is static or predictable without checking current conditions.

Understanding "Normal" vs "Expected" Behaviour

Within the RENOGY environment, it is important to distinguish between behaviour that is:

- **Normal** (operating within design parameters)
- **Expected** (operating in the way the user anticipates)

These two are not always the same.

For example:

- A sudden drop in displayed SOC may be *normal*, but not *expected*
- Solar charging showing intermittent values may be *normal*, but not *intuitive*

- Inverter alarms activating under moderate load may be *normal*, but not *desirable*

Understanding this distinction reduces unnecessary fault reporting and improves long-term system confidence.

Software-Dependant Behaviour and Assumptions

RENOGY systems rely heavily on firmware and software-level logic to interpret electrical data. As with all software-dependent systems, behaviour may change depending on:

- Firmware version
- Display module state
- App version
- Pairing order
- System reset history

No assumption should be made that behaviour observed today will remain unchanged following updates, resets, or re-pairing processes.

Power Cycling and Reset Implications

Power cycling parts of the RENOGY system may affect:

- SOC reference values
- Pairing persistence
- Display synchronisation
- Network behaviour

While power cycling is sometimes necessary, it should not be relied upon as a routine troubleshooting method without understanding which components are being reset and which are not.

Display Data Interpretation Discipline

Owners are encouraged to interpret RENOGY display data **contextually rather than absolutely**.

Examples include:

- Using voltage trends instead of single voltage values
- Observing charging direction rather than instantaneous current
- Using SOC as a general reference rather than a precise indicator
- Reviewing multiple screens to confirm behaviour

No single screen or app page should be considered authoritative in isolation.

Redundancy in Monitoring Interfaces

Because data is available via:

- RENOGY ONE Core
- RENOGY ONE Vision
- Mobile application

Owners may encounter situations where:

- Values differ slightly between interfaces
- Updates appear delayed on one device
- Certain controls are accessible in one location but not another

These differences are a consequence of device communication timing and should be interpreted accordingly.

Continuity of Configuration After Changes

Any change to system configuration may alter behaviour elsewhere.

Examples include:

- Updating battery capacity affecting SOC tracking

- Changing SOC source affecting displayed percentage
- Modifying inverter settings influencing battery alarms
- Altering solar wiring affecting charging logic

After any configuration change, the system should be observed over a full charge and discharge cycle to confirm steady-state behaviour.

Operational Changes During Travel

Electrical behaviour may differ significantly between:

- Stationary use
- Driving conditions
- Engine-on vs engine-off states

This is particularly noticeable when:

- DC/DC charging begins or ends
- Solar input fluctuates rapidly
- Vehicle alternator supply is intermittent

Owners should expect system values to change dynamically during travel without necessarily indicating faults.

Environmental Influence on System Behaviour

Environmental factors influence multiple aspects of the RENOGY system, including:

- Battery acceptance rates
- Solar panel output
- Inverter efficiency
- Cooling of power electronics

Cold temperatures, for instance, may reduce charge acceptance or alter charging stage timing, which can affect SOC behaviour and displayed metrics.

Load Management as an Ownership Responsibility

RENOGY systems do not prevent users from over-requesting power. Instead, load management relies on user awareness.

Owners should be mindful of:

- Total inverter load
- Simultaneous appliance usage
- Available battery discharge capability
- Charging availability during load usage

Failure to manage load appropriately may result in protective shutdowns or alarms.

Alarm Interpretation and Owner Response

Alarms within the RENOGY system are informational by design and may require interpretation.

Common alarm triggers include:

- Low voltage conditions
- Over-current situations
- Peak inverter load events

Owners should treat alarms as indicators to **review system state**, not automatically as component failures.

Persistence of Historical Data

Some displayed data within the RENOGY system reflects accumulated historical values rather than live conditions. These values may not reset automatically and should be reviewed with an understanding of their time basis.

Long-Term Ownership Considerations

Over time, RENOGY system owners should expect to:

- Periodically review configuration settings
- Re-verify battery capacity values
- Confirm SOC accuracy after prolonged storage
- Check pairing integrity after power interruptions

This ongoing involvement forms part of normal ownership of a digitally managed electrical system.

Storage Behaviour and Background Loads

Even when the caravan is not actively in use, RENOGY system components may continue to draw small amounts of power.

Owners should:

- Ensure a charging source is available during storage
- Monitor battery state regularly
- Avoid long-term storage without solar or mains input

Failure to do so may result in unexpected battery depletion.

Responsibility for System Literacy

The RENOGY system provides a high level of information and configurability. Extracting value from this capability requires a degree of system literacy on the part of the owner.

Austrack encourages owners to:

- Read this section in full
- Become familiar with system menus
- Understand inter-component relationships
- Seek clarification before making changes

Service, Review, and Professional Support

Given the complexity and configurational nature of the RENOGY system, professional assessment may be beneficial when behaviour is unclear.

For configuration review, diagnostics, or system performance concerns, **Austrack recommends contacting AOE RV Service Centre as the primary point of support**.

AOE RV Service Centre is familiar with:

- Austrack electrical layouts
- RENOGY ONE systems
- Battery integration practices
- Charging logic across multiple sources

If AOE RV Service Centre is not accessible due to geographic location, assistance should then be sought from a suitably qualified caravan or RV service technician experienced with RENOGY systems.

Concluding Operational Notice

The RENOGY electrical system is capable of supporting a wide range of travel scenarios when configured and managed correctly. At the same time, it requires careful interaction, thorough configuration, and ongoing awareness.

Owners are encouraged to treat the RENOGY system as an active component of caravan operation rather than a passive background system.

Solar

(All Models and Electrical System Types)

Austrack campers are equipped with solar charging capability intended to provide **ongoing battery maintenance and off-grid power support** during daylight hours. Solar charging is a foundational element of the camper's overall electrical architecture and is designed to reduce reliance on external power sources such as mains electricity or generator supply, particularly during extended stationary use.

Across the Austrack range, solar input may be provided by a combination of **vehicle-mounted solar panels**, **portable external solar equipment**, or both. The physical configuration of solar hardware and the method by which solar energy is regulated and delivered to the battery system varies

depending on model and electrical specification. Regardless of configuration, all Austrack solar systems are designed to operate **automatically**, commencing charging whenever suitable sunlight is available and electrical conditions permit.

This section provides a comprehensive, model-agnostic explanation of how solar charging operates across **all Austrack campers**, and clearly identifies where system behaviour differs between electrical architectures.

Solar System Architectures Across the Austrack Range

Austrack campers are produced with multiple electrical configurations, and solar charging is intentionally integrated to suit the characteristics of each system. Rather than using a single universal solar arrangement, Austrack employs **configuration-specific solar pathways** designed to deliver regulated, battery-safe charging current under real-world conditions.

In general terms, Austrack solar systems fall into one or more of the following categories:

- Campers fitted with a **RENOGY electrical system**
- Campers fitted with a **standard (non-Renogy) electrical system**
- Campers using **portable solar equipment** as the primary or supplementary solar source
- Campers fitted with **vehicle-mounted solar panels**, including roof-style installations

While the physical components differ, all systems share the same functional objective: to ensure solar energy is correctly regulated and safely delivered to the onboard battery system.

Fundamentals of Solar Charging Operation

Solar charging begins when sunlight strikes the photovoltaic surface of a solar panel or solar blanket, producing direct current (DC) electrical energy. This raw electrical output is not suitable for direct connection to the battery system and must pass through a **solar regulation stage** before being applied as charging current.

Solar regulation performs several critical functions, including:

- Matching solar output voltage to battery charging requirements
- Limiting charging current to safe levels
- Adjusting charge profiles based on battery state
- Tapering charge rate as batteries approach full capacity

Solar regulation may be performed either **internally**, within the camper's electrical system, or **externally**, within the solar equipment itself. Once regulation is correctly configured, solar charging occurs automatically with no further user input required during normal operation.

Solar Charging with RENGOY Electrical Systems

Campers fitted with a **RENOGY electrical system** accommodate solar charging through Renogy's internal charging architecture. However, not all Renogy-equipped Austrack campers include a dedicated onboard solar regulator.

On **most Austrack Hard Floor models fitted with a Renogy system**, a separate onboard solar regulator is **not installed by design**. In these configurations, solar regulation is intentionally performed **externally**, prior to power entering the camper.

Where a Renogy system is fitted **without an onboard solar regulator**:

- Solar input from portable solar equipment is regulated at the source
- Regulated DC output is supplied to the camper via the Anderson plug
- The Renogy system accepts this supply as conditioned DC input
- Battery charging proceeds within safe operating limits

This configuration is specifically designed to operate in conjunction with the supplied **AusTuff solar blanket**, which incorporates its own regulation hardware.

Portable Solar Equipment and External Solar Regulation

With the exception of specific model variants noted later in this section, Austrack campers are supplied with an **AusTuff portable solar blanket** as standard solar equipment.

The AusTuff solar blanket is not a passive solar panel. It incorporates an **integrated solar regulator**, which performs all voltage and current control functions before power is delivered to the camper. In systems without an onboard regulator, this external regulation is an **essential and mandatory part of the charging pathway**.

Key characteristics of the AusTuff solar blanket include:

- Built-in solar regulation hardware
- Automatic adjustment to changing sunlight conditions
- Regulated DC output suitable for direct battery charging

On Renogy-equipped campers that do not have an onboard regulator, the solar blanket's regulator **must always remain active**.

Critical Clarification – Solar Regulator Use

Solar charging systems must be designed so that **regulation occurs once, and only once**, within the charging pathway. The presence of multiple regulators in series can lead to unstable charging behaviour, reduced efficiency, or protective system shutdown.

Accordingly, the following rules apply across the Austrack range:

- **Renogy-equipped campers without an onboard regulator MUST use the solar blanket's regulator**
- **Renogy-equipped campers with an onboard solar regulator MUST NOT use the solar blanket's regulator**
- **Standard (non-Renogy) electrical systems MUST use the solar blanket's regulator**

Owners must confirm which regulation method applies to their specific camper before connecting any solar equipment.

Solar Charging on Standard (Non-Renogy) Electrical Systems

Campers fitted with the **standard battery charging system** do not include any internal solar regulation circuitry. The electrical system in these models is designed to accept **regulated DC input only**.

In this configuration:

- All solar input must be externally regulated
- The AusTuff solar blanket provides the required regulation
- Regulated solar output is supplied via the **rear Anderson plug**
- Charging current is delivered directly to the battery system

This charging behaviour is functionally identical to Renogy-equipped campers that do not include an onboard solar regulator.

New-Body Plenty X – Boat Rack-Mounted Solar Panel

The **new-body Plenty X** incorporates an additional, model-specific solar configuration. This model is fitted with a **vehicle-mounted solar panel integrated into the boat rack assembly**.

Unlike portable solar equipment, this panel functions as a fixed, roof-style solar installation and includes its own **dedicated MPPT (Maximum Power Point Tracking) solar regulator** as part of the installation.

Key characteristics of this system include:

- The boat-rack-mounted panel is permanently installed
- Solar regulation is performed by a built-in MPPT regulator
- Regulated solar output is delivered to the Renogy system
- Battery charging is managed automatically

Once deployed and exposed to sunlight, this system requires no user intervention.

Important Configuration Note – New Body Plenty X and RENOGY Hard Floor Models

In addition to fixed solar installations, many Renogy-equipped Hard Floor models are also fitted with a **rear Anderson plug** intended for external DC input, such as portable solar equipment.

Depending on specific build configuration, the rear Anderson plug on Renogy Hard Floor models **may be wired either**:

- Directly to the battery system, expecting externally regulated input, or
- Into an MPPT solar regulation pathway within the Renogy system

Because this wiring configuration can vary, **owners must not assume** the electrical destination of the Anderson plug.

Before connecting any solar equipment to the rear Anderson plug on a Renogy-equipped Hard Floor model—particularly the new-body Plenty X—owners must:

- Confirm whether the Anderson plug feeds directly to the battery or into an MPPT regulator
- Ensure that **only one solar regulator is active** in the charging pathway
- Avoid connecting regulated solar input into a regulated MPPT circuit unless compatibility is confirmed

Where uncertainty exists, owners should contact **AOE RV Service Centre** for clarification prior to connection.

Normal Solar Performance Expectations

Under typical daytime conditions, Austrack solar systems are capable of maintaining battery charge for normal camper operation, including lighting, water pumps, refrigeration, and general 12-volt appliance usage.

However, solar output is inherently variable and dependent on environmental conditions. Charging rates will fluctuate throughout the day and between locations.

Factors influencing solar performance include:

- Sun angle and seasonal variation
- Cloud cover and atmospheric conditions
- Partial or full shading
- Panel or blanket cleanliness
- Electrical load demand

Even minor shading across a portion of the solar surface can have a disproportionate effect on overall output.

Situations Where Solar Alone May Be Insufficient

Although designed to support extended off-grid use, solar charging may not always be sufficient to replace daily energy consumption.

Common situations include:

- Prolonged overcast or rainy conditions
- Camping in heavily shaded areas
- Extended inverter operation
- Additional refrigeration appliances
- Long stationary stays without vehicle movement

In these circumstances, supplementary charging from the tow vehicle or external 240-volt power may be required.

Use of External Portable Solar Panels

Austrack campers are designed to support **external portable solar panels**, particularly in scenarios where roof or fixed solar exposure is limited.

External solar equipment is commonly used to:

- Improve charging in shaded campsites
- Increase total daily solar harvest
- Offset higher-than-normal power consumption

Portable solar panels should always be:

- Properly regulated
- Correctly connected via Anderson plugs
- Positioned for optimal sun exposure
- Monitored periodically to confirm charging activity

Solar and Battery Monitoring

Solar input and battery charging behaviour can be monitored via:

- The **Renogy control interface**, where fitted
- System-specific indicators depending on electrical configuration

Displayed values represent real-time conditions and will fluctuate throughout the day as sunlight intensity and electrical loads change.

Owner Best Practice Guidelines

To maximise solar performance and system reliability, Austrack recommends:

- Positioning the camper to maximise sun exposure
- Avoiding shade across any part of the solar surface
- Cleaning panels and blankets periodically
- Managing inverter and high-draw appliance usage

- Monitoring battery condition during extended off-grid stays

Solar systems are most effective when energy consumption is balanced with available input.

Service and Support

Solar systems generally require minimal maintenance. If charging does not occur under suitable conditions or system behaviour appears inconsistent, Austrack recommends contacting **AOE RV Service Centre** as the first point of support.

If AOE RV Service Centre is not accessible due to location, assistance should be sought from a suitably qualified caravan or RV service technician.

IMPORTANT NOTICE

Solar charging performance varies based on environmental conditions, system configuration, and usage patterns. Solar systems are designed to **supplement and maintain battery charge**, not to provide unlimited power availability under all circumstances.

Understanding the specific solar configuration fitted to your camper—including where regulation occurs—is essential for reliable and safe off-grid operation.

Mains Power (240 V)

All Austrack campers are fitted as standard with a **240 V mains power input**, allowing the electrical system to be supplied directly from an external power source such as a caravan park power outlet or suitable household supply (via an approved adapter).

Mains power provides the most stable and continuous source of electrical energy for the caravan and is used to:

- Charge the onboard battery system

When mains power is connected, the caravan's electrical system will automatically distribute power as designed, depending on whether the caravan is fitted with a PROJECTA or RENOGY electrical system.

1800 797 797
sales@austrackcampers.com.au
austrackcampers.com.au

Mains Power Inlet Location

The **240 V mains power inlet** is located on the **driver's side of the camper**, externally mounted for easy access.

Although the image provided shows an earlier white inlet with a clear weather cover, current Austrack campers are fitted with a **black mains inlet and black weather cover**. The function, rating, and operation remain exactly the same regardless of colour.

15 Amp Mains Connection Requirement

Austrack campers are fitted with a **15 amp (15 A) inlet**, which is specifically designed for caravan and RV use. A 15 A connection is identified by:

- A **larger earth pin** than standard household plugs
- Matching larger earth pins on both ends of a 15 A extension lead

Because of this, a standard household extension lead **cannot be connected directly** to the camper.

To connect mains power correctly, you must use:

- A **15 A caravan extension lead**, or
- A **10 A to 15 A adaptor** (commonly referred to as an Amphibian lead or safety adaptor)

Any 10 A to 15 A adaptor used **must incorporate a safety switch (RCD)**. These adaptors are widely available from camping, caravan, and hardware retailers.

Using a 10 A Power Outlet Safely

If the camper is being connected to a **standard household 10 A power outlet**, the following rules apply:

- A **10 A–15 A adaptor with an integrated safety switch must be used**
- The adaptor must be in good condition and correctly rated
- The power point supplying the adaptor must be known to be in safe working order

⚠️ **Important Safety Warning:**
Attempting to connect the camper directly to a 10 A outlet **without an approved adaptor** is extremely dangerous and may result in serious injury or death. Incorrect use can also cause damage to electrical equipment and wiring.

Residual Current Device (RCD) Safety Switch

For protection against electrical faults, Austrack caravans are fitted with an **RCD (Residual Current Device) safety switch** for the 240 V circuits.

The RCD safety switch is located:

- **Internally**, at the **outside end of the internal seating area**

The RCD is designed to:

- Detect electrical leakage
- Immediately disconnect power in the event of a fault
- Reduce the risk of electric shock

Owners should familiarise themselves with the RCD location and test its operation periodically using the test button.

Normal Operation on Mains Power

When 240 V mains power is connected and available, system behaviour differs depending on the **electrical platform fitted to the caravan**.

PROJECTA Equipped Caravans

In campers fitted with a **PROJECTA electrical system**, mains power operation is fully automatic.

When mains power is connected:

- Battery charging begins automatically
- The inverter does need to be turned on

RENOGY Equipped Caravans

In campers fitted with a **RENOGY electrical system**, operation differs.

RENOGY systems **do not incorporate an automatic 240 V change-over relay**. As a result, connecting mains power alone does not automatically energise all 240 V circuits.

When mains power is connected on RENOGY-equipped campers:

- Battery charging via the mains charger may occur automatically
- Some 240 V appliances may still require the **inverter to be turned ON manually**
- The RENOGY system relies on **user-initiated control** via the screen, switch panel, or mobile app

Owners of RENOGY-equipped caravans must ensure the inverter and relevant outputs are correctly enabled when operating on mains power, as system behaviour is not fully automated.

Important Owner Note

Because mains power behaviour differs between PROJECTA and RENOGY systems, owners should familiarise themselves with the specific electrical platform fitted to their caravan to ensure appliances operate as expected and unnecessary inverter use is avoided.

If unsure, **Austrack recommends contacting AOE RV Service Centre** for clarification or system orientation. If AOE RV Service Centre is not accessible due to location, assistance should be sought from a suitably qualified caravan or RV service technician.

Disconnecting Mains Power

Before disconnecting mains power:

- Switch off the supply at the power outlet
- Disconnect the extension lead from the camper inlet
- Store leads and adaptors in a dry location

Always disconnect power **before relocating the camper**.

Service and Safety Support

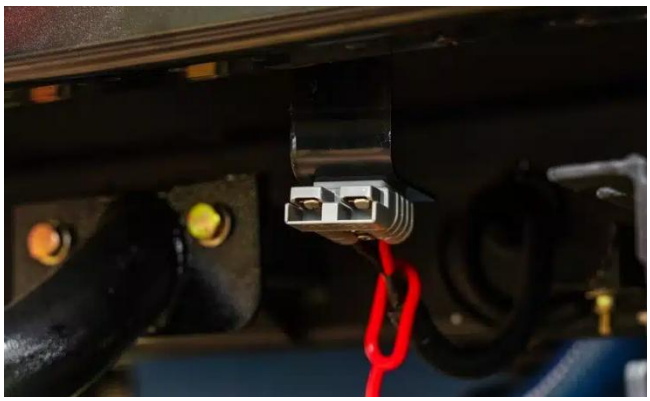
If there are any concerns regarding:

- Mains power connection
- Tripping RCDs
- Burnt plugs, leads, or inlets
- Intermittent 240 V supply

Austrack recommends contacting AOE RV Service Centre as the primary point of contact for inspection and rectification. AOE RV Service Centre is familiar with Austrack electrical systems and caravan wiring standards.

If AOE RV Service Centre is not accessible due to geographic location, assistance should then be sought from a suitably qualified 240 V electrician or RV service technician with a 240 V electrician.

Rear Anderson Plug – External Power & Solar Input



Austrack Hard Floor campers are equipped with a **rear-mounted Anderson plug**, typically located on the driver's side toward the rear of the camper. This plug is designed as a **12-volt direct current (DC) interface**, intended to allow external DC power sources to be connected to the camper's electrical system in a controlled manner.

The rear Anderson plug plays a key role in off-grid operation, particularly when using **portable solar equipment** or when supplementary charging is required beyond fixed or vehicle-based charging sources. When used correctly, this connection provides flexibility in campsite selection, allows solar equipment to be positioned independently of the camper, and enables controlled DC energy transfer into the battery system.

Because this plug interfaces directly with the camper's DC electrical infrastructure, correct understanding of its function and wiring is essential to avoid charging faults or electrical damage.

Intended Purpose of the Rear Anderson Plug

The rear Anderson plug on Austrack Hard Floor campers is primarily intended as an **external DC connection point**, most commonly used for portable solar charging applications. It is designed to accept DC input from sources that have already been appropriately regulated to suit the camper's battery system.

In normal use, the rear Anderson plug may be utilised for the following purposes:

- Connection of **regulated portable solar panels or solar blankets**
- Supplementary battery charging when fixed solar exposure is limited
- Controlled DC input from approved external sources
- Limited 12 V DC output for suitable external equipment, where appropriate

It is important to note that the rear Anderson plug is **not a raw solar input by default**, and its behaviour depends on the electrical configuration of the specific camper.

Electrical Routing and System Variations (IMPORTANT)

Across the Austrack Hard Floor range, the electrical destination of the rear Anderson plug **can vary depending on model and electrical system specification**.

On many Hard Floor models, the rear Anderson plug is wired **directly to the battery system**, bypassing any onboard solar regulation. In these cases, the camper expects that any solar or DC input provided through this connection is **already regulated** to a battery-safe voltage and current.

However, on some Hard Floor models fitted with a **RENOGY electrical system**, the rear Anderson plug **may be routed into an internal MPPT charging pathway** rather than directly to the battery.

Because both configurations exist:

- Owners **must not assume** that the rear Anderson plug always connects directly to the batteries
- Owners **must not assume** that solar regulation is or is not present upstream of this connection

This distinction is particularly important on **RENOGY-equipped Hard Floor models**, including the new-body Plenty X.

Solar Charging via the Rear Anderson Plug

When portable solar equipment is connected via the rear Anderson plug, correct regulation is critical. Solar panels generate variable voltage depending on sunlight conditions, and unregulated input may exceed the safe charging limits of the battery system.

Where the rear Anderson plug connects **directly to the battery system**, the solar source must provide its **own active regulation** before being connected.

In these configurations:

- A solar regulator is required
- The regulator may be integrated into the solar blanket (e.g. AusTuff)
- Alternatively, an inline regulator may be used
- Only regulated DC output must be supplied to the Anderson plug

⚠️ **Important Safety Warning**
Connecting an unregulated solar panel directly to a rear Anderson plug that feeds the battery system may result in over-voltage charging. This can cause severe battery damage, overheating, or damage to associated electrical components.

Always confirm that any external solar equipment connected:

- Has a functional regulator, and
- Is correctly configured for the camper's battery chemistry and system voltage

Regulator Use and "Single Regulation" Requirement

Solar charging systems must always follow the principle of **single-point regulation**. At no time should solar current pass through more than one active regulator in series.

Accordingly:

- If the rear Anderson plug feeds **directly to the battery**, the external solar regulator **must remain active**
- Regulators built into solar blankets **must not be bypassed** in this configuration
- If the rear Anderson plug feeds into an **internal MPPT regulator**, external regulators **must not be active**

Using two regulators in series can cause:

- Erratic charging behaviour
- Reduced charging efficiency
- MPPT tracking errors
- Protective shutdowns or system faults

Because rear Anderson routing may vary on RENOGY Hard Floor models, verification is required before connection.

New-Body Plenty X – Specific Considerations

The **new-body Plenty X** includes a fixed solar panel mounted to the **boat rack assembly**, which is fitted with its **own dedicated MPPT solar regulator**. This regulator manages charging from the boat-rack-mounted panel independently and delivers regulated input into the RENOGY charging architecture.

In addition to this fixed solar system, new-body Plenty X models may also be fitted with a rear Anderson plug for external DC input.

At the time of publication, the rear Anderson plug on RENOGY-equipped Hard Floor models **may be wired either**:

- Directly to the battery system, or
- Into the RENOGY MPPT charging input

For this reason, owners of new-body Plenty X models **must confirm** the routing of the rear Anderson plug before connecting solar equipment, particularly regulated solar blankets.

Where uncertainty exists, Austrack strongly recommends confirming configuration with **AOE RV Service Centre** before use.

Circuit Protection – 50A DC Circuit Breaker

The rear Anderson plug circuit is protected by a **50 A, 12 V DC circuit breaker**, installed within the camper's electrical system.

This circuit breaker:

- Protects cabling and battery systems from over-current events
- Interrupts power flow in the event of a short circuit or overload

- Automatically isolates the rear Anderson plug when tripped

If the breaker trips:

- Power flow through the rear Anderson plug will cease
- External solar charging or DC output will stop
- The cause must be identified and resolved before resetting

⚠️ Repeated breaker tripping is not normal and indicates:

- Incorrect equipment connection
- Excessive load
- Faulty solar regulation
- Polarity or wiring issues

Such events should not be ignored.

Input and Output Capability

The rear Anderson plug functions as a **bi-directional DC connection**, meaning it can act as both a power input and a power output, depending on what is connected.

As an input:

- It commonly receives regulated solar charging current

As an output:

- It may supply 12 V DC power to suitable external equipment

Owners must remain aware that:

- Power drawn from this connection comes directly from the battery
- Loads connected here are not load-managed by the control system
- Excessive external use may deplete battery capacity rapidly

Do Not Confuse with the Front Anderson Plug

Some Austrack Hard Floor campers are also fitted with an **Anderson plug at the front of the camper**, typically associated with tow-vehicle charging.

These two connections serve **entirely different purposes**:

- **Rear Anderson plug**: external solar input and DC accessory connection
- **Front Anderson plug**: vehicle-based charging input only

They are **not interchangeable**.

Incorrect connection may result in charging faults, ineffective operation, or electrical damage.

Best Practice Guidelines for Owners

To ensure safe and effective use of the rear Anderson plug, Austrack recommends that owners:

- Use regulated solar equipment only
- Confirm Anderson plug routing before first use
- Verify polarity before every connection
- Monitor battery voltage during operation
- Disconnect external equipment prior to towing
- Seek clarification if unsure of compatibility

Service and Support

If there is any uncertainty regarding:

- Rear Anderson plug wiring
- Solar regulator requirements
- MPPT interaction on RENOGY systems
- Circuit breaker behaviour
- Unexpected charging behaviour

Austrack recommends contacting **AOE RV Service Centre** as the primary point of support. If this is not accessible due to location, assistance should be sought from a suitably qualified RV or automotive electrical technician.

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IMPORTANT NOTICE

The rear Anderson plug interfaces directly with the camper's DC electrical system and is protected by a 50 A circuit breaker. Incorrect use, connection of unregulated power sources, double regulation, reversed polarity, or repeated breaker tripping may result in damage or safety risks.

Always verify regulation requirements and electrical routing before connecting external equipment.

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Gas System

Austrack Campers and Caravans are equipped with a professionally installed LPG gas system designed to safely supply approved external gas appliances only. There are only select models with a gas stove fitted inside, and internal gas cooking is not permitted for those without under any circumstances.

The gas system has been designed with safety, simplicity, and flexibility in mind, allowing owners to use approved external cooking appliances via the rear-mounted (front for some models) bayonet gas outlet. Correct operation and adherence to the guidelines in this manual are essential for safe use.

Gas Cylinders and Connections

LPG gas cylinders are securely mounted in the front-mounted gas bottle holders, which are specifically designed to allow safe ventilation and easy access. The system is fitted with a single LCC27 gas hose connection, suitable only for compatible LPG cylinders approved for use in Australia.

Austrack campers are not fitted with an automatic gas bottle changeover or switching valve. Gas is supplied from one cylinder at a time, and manual connection is required when changing bottles.

To ensure safe operation of the system:

- Only compliant LPG cylinders may be used
- Ensure the LCC27 connection is fully tightened before opening the cylinder valve
- When a cylinder is empty, turn the gas off before disconnecting the hose
- Manually reconnect the hose to a full cylinder before resuming use

Gas Bottle Holder Safety

The front gas bottle holders are generally stored behind the stone guard at the front of the camper. Some campers however, like the Plenty X, have a toolbox at the front instead with gas-only compartments and must never be used for general storage.

LPG gas is highly flammable. In the unlikely event of a gas leak, gas can accumulate rapidly. Even a minor ignition source — including static electricity — can cause fire or explosion, resulting in serious injury or damage.

For this reason, the following rules must always be followed:

- Do NOT store tools, recovery gear, electrical items, or loose equipment in the gas bottle compartment
- Ensure gas cylinders are correctly secured at all times
- Regularly inspect hoses and fittings for damage, wear, or leaks

 The front toolbox that houses the gas cylinders **MUST** not be used to store anything but the gas cylinders. In the event of a gas leak, a spark as small as static electricity can cause the gas to ignite, causing an explosion.

Hot Water System Gas Isolation – PLENTY X MODELS

The hot water system is supplied from the main LPG gas system and is fitted with a manual isolation valve located underneath the hybrid. This valve allows the hot water system to be isolated when required.

For the hot water system to operate correctly, the isolation valve must be positioned correctly. Incorrect alignment will prevent gas flow.

Before operating the hot water system, ensure:

- The isolation valve is positioned in line with the gas hose
- The gas cylinder valve is open
- No gas smell is present

Ventilation and Safe Use

All LPG gas appliances produce heat and combustion gases. Adequate ventilation is critical whenever the gas system is in use.

Before operating any gas appliance, the camper or caravan must be set up correctly to allow airflow:

- All appliance covers must be removed
- The vinyl cover on the lower main door vent must be removed
- No ventilation openings are obstructed

Failure to ventilate correctly may result in unsafe operating conditions

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Travelling With Gas

For safety and compliance, the gas supply must be turned off at the gas cylinder before travel.

Austrack strongly recommends purging gas from the system prior to travelling to reduce risk. This is done by allowing the gas already in the lines to burn off.

To purge the gas lines safely:

- Light the external kitchen gas burner or connected appliance
- Turn off the gas cylinder valve in the front gas bottle
- Allow the flame to extinguish naturally
- Wait until the appliance is cool to the touch
- Close and stow the kitchen or appliance

Gas System Modifications

Any modification to the gas system may compromise safety and compliance. Under Australian regulations, all gas system alterations are considered gas work and must only be carried out by a licensed gas fitter.

This includes, but not limited to:

- Changes to the gas piping, hoses, or regulators
- Installation of alternative appliances
- Addition or modification of ventilation or covers

Unauthorised modifications may void warranties and create serious safety risks.

Any changes to the gas system, including the addition of vent covers, is considered to be gas work and must be completed by holder of a gas work licence.

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Water System

The Austrack water system is a fully integrated, pressurised supply system designed to support **self-contained camping** as well as connection to **external mains water sources**, depending on campsite facilities and model configuration. The system is engineered to deliver potable water reliably to all water outlets, including the kitchen, shower, and hot water system, while maintaining appropriate operating pressure and safeguarding components from over-pressure or back-flow.

Across the Austrack range, the water system consists of **onboard water storage tanks**, an **electrically driven pressure pump**, provisions for **external mains water connection**, and a **dedicated hot water system** matched to the specific model. While component placement and hot water system specification vary between models—particularly on the Plenty X—the fundamental operating principles remain consistent. This section explains the layout, operation, and interaction of all water system components, and outlines how water is supplied, pumped, heated, and distributed throughout the camper under both off-grid and mains-connected conditions.

Water Tanks

Austrack campers are fitted with dedicated **fresh water tanks** designed to support extended travel. Tank capacities and layouts vary by model, however all systems follow the same operating principles, including independent fresh water tanks and controlled tank selection. Understanding the configuration and correct operation of these tanks is essential for reliable water supply, accurate monitoring, and responsible waste management during both on-grid and off-grid use.

Water Tank Capacities by Model

The table below outlines the standard fresh and gr ey water tank capacities fitted to each Austrack model. Tank configurations are fixed per model at the time of manufacture.

Model	Front Fresh Water Tank	Rear Fresh Water Tank	Grey Water Tank
X Model Range			
Telegraph X	120 L	50 L	-
Savannah X	120 L	50 L	-
Plenty X (Old Body)	160 L	50 L	-
Plenty X (New Body)	160 L	50 L	-
LT Model Range			
Telegraph LT	120 L	-	-
Plenty LT	120 L	-	-

Fresh Water Tank Operation

Where two fresh water tanks are fitted, **the tanks are not interconnected**. Only one fresh water tank can be used at any given time, with tank selection controlled via a **manual tank-selector valve**.

Depending on model and layout, the tank-selector handle is located:

- Inside the driver side maintenance compartment, **or**
- Inside the external shower compartment (For New Body Plenty X Models)

The **blue selector handle** is designed to clearly indicate which tank is currently in use. The handle points in the direction of the selected tank:

- Handle pointing **forward** = front tank in use
- Handle pointing **rearward** = rear tank in use

For consistent water supply and accurate monitoring, Austrack recommends **fully emptying one fresh water tank before switching to the other**, rather than drawing from both tanks intermittently.

Filling Fresh Water Tanks

Each fresh water tank must be **filled independently** using its designated filler inlet. Water does not transfer between tanks.

Each filler is equipped with a **breather hole**, which allows air to escape as the tank fills. If this breather becomes blocked:

- Water may back up at the inlet
- The tank will not fill correctly

A fresh water tank is considered **full when water begins to exit the breather hole**.

IMPORTANT NOTICE

The fresh water system is designed for controlled use. Incorrect tank selection, blocked breathers, or improper sullage water disposal from the kitchen may result in system faults or environmental penalties.

If any issues arise relating to tank selection, water supply, filling, or drainage, **Austrack recommends contacting AOE RV Service Centre as the primary point of support**. If AOE RV Service Centre is not accessible due to geographic location, assistance should be sought from a suitably qualified caravan or RV service technician.

Water Pump

Austrack campers are fitted with a **SeaFlo 12 V pressure water pump**, rated at **11.3 litres per minute**, which supplies pressurised fresh water throughout the caravan. The pump draws water from the selected fresh water tank and delivers it to taps, the shower, and the hot water system as required.

The pump is designed specifically for caravan and RV use and operates automatically based on water demand. It is powered by the caravan's 12 V electrical system and does not require mains power to operate.

Water Pump On/Off Switch – Purpose and Use

The water pump is fitted with a **dedicated on/off switch**, typically located on the main internal control panel. This switch gives the user direct control over pump operation and plays an important role in protecting the water system.

The pump switch should be used to:

- Prevent the pump from running constantly if a fresh water tank runs empty
- Stop the pump in the event of a plumbing leak
- Allow controlled troubleshooting if an airlock occurs
- Disable the pump when the camper is not in use or unattended

Austrack strongly recommends switching the water pump **off**:

- When travelling on rough or corrugated roads
- When the camper is not occupied
- If abnormal pump behaviour is observed

Leaving the pump switched on in these situations can result in unnecessary pump wear or damage.

How the Water Pump Operates

The SeaFlo pump is a **pressure-activated system**. When water pressure in the plumbing drops, the pump turns on automatically. When pressure is restored, the pump stops.

Normal operation sequence:

- Open a tap or shower → pressure drops → pump turns on
- Close the tap → pressure builds → pump pressurises and stops

If all taps are closed and the system is working correctly, the pump **should pressurise and then switch off**.

If the pump continues running with all taps closed, this indicates an issue that must be addressed.

Tank Selection and Pump Operation

The pump draws water only from the **currently selected fresh water tank**.

Where multiple fresh water tanks are fitted:

- Only one tank may be used at a time
- The pump does not automatically switch between tanks

If the selected tank runs out of water:

- Water flow will stop
- The pump may continue to run as it attempts to build pressure

If this occurs, turn the pump **off immediately**, select the next tank, and then turn the pump on again once water is available.

Airlocks – Identification and Correction

An **airlock** may occur after:

- Switching fresh water tanks
- Running a tank dry
- Draining the water system

- First use after storage

When an airlock is present, the pump may:

- Run continuously
- Sound louder than normal
- Fail to shut off even when taps are closed
- Deliver uneven or spluttering water flow

Clearing an Airlock

To clear an airlock:

1. Ensure a fresh water tank containing water is selected
2. Turn the **water pump ON**
3. Open any tap fully
4. Allow water and air to **spatter and surge** from the tap
5. Keep the tap open until a **smooth, continuous flow** of water is achieved
6. Close the tap

Once the tap is closed, the pump should:

- Re-pressurise the system
- Automatically switch off

If the pump fails to stop after this process, turn the pump off and repeat the procedure.

Dry-Running and Pump Protection

The SeaFlo water pump is not designed to operate without water for extended periods.

Allowing the pump to run dry or against an airlock may:

- Increase wear on internal components
- Cause overheating

- Lead to premature pump failure

The on/off switch is provided specifically to prevent this and should be used whenever abnormal operation is observed.

Noise, Vibration, and Normal Behaviour

Some pump noise or vibration is normal, particularly:

- During initial priming
- When clearing air from the system
- When water demand changes rapidly

Excessive or continuous noise may indicate:

- An airlock
- Low tank level
- A loose plumbing connection
- A leak in the system

These conditions should be investigated promptly.

Service and Support

If the water pump:

- Fails to pressurise
- Runs continuously with no taps open
- Cannot be cleared of airlocks
- Stops delivering water

Austrack recommends contacting AOE RV Service Centre as the primary point of support. AOE RV Service Centre is familiar with Austrack plumbing systems and pump installations.

If AOE RV Service Centre is not accessible due to geographic location, assistance should be sought from a suitably qualified caravan or RV service technician.

IMPORTANT NOTICE

The water pump is a critical component of the fresh water system. Damage caused by dry-running, unresolved airlocks, leaks, freezing, or incorrect operation may not be covered under warranty.

Always use the pump on/off switch as intended and address abnormal pump behaviour immediately.

Mains Water

Austrack campers are equipped with a **mains water inlet**, allowing the camper's internal plumbing system to be supplied directly from an external pressurised water source, such as a caravan park tap. This provides convenient, on-demand water supply without drawing from the onboard fresh water tanks.

The mains water system operates independently of the fresh water tanks and water pump and is intended for use primarily when connected to permanent or semi-permanent water supplies.

Mains Water Inlet

The mains water inlet fitted to Austrack campers is a **SeaFlo mains water inlet**, designed specifically for caravan and RV applications. The inlet includes an integrated pressure regulation and non-return functionality suitable for connection to standard water taps when used correctly.

The inlet is externally mounted on the camper for easy access and connection using a potable water hose.

Critical Requirement – Water Pump Must Be Turned OFF

When using mains water, the **12 V water pump must be switched OFF** at the control panel.

This is essential because:

- Mains water supplies pressurised water to the plumbing system
- The onboard pump is not required and must not operate simultaneously
- Leaving the pump on may cause unnecessary cycling or damage

⚠️ **Important:**
Failure to turn off the water pump while connected to mains water can lead to water system faults, pump damage, or abnormal operation. Always switch the pump off before connecting mains water.

How Mains Water Works

When mains water is connected:

- Pressurised water is supplied directly to the camper's plumbing
- Taps, shower, and appliances operate from the external supply
- The onboard water pump remains inactive (when correctly switched off)

Mains water **bypasses the fresh water tanks entirely**.

Mains Water Does NOT Fill Fresh Water Tanks

It is important to understand that **mains water does not fill the onboard fresh water tanks**.

Key points:

- Fresh water tanks must still be filled manually via their dedicated tank fillers
- Connecting mains water only supplies the internal plumbing system
- Tank levels will not increase while connected to mains water

This is normal system behaviour and is not a fault.

Tank Selection When Using Mains Water

While mains water is in use:

- Fresh water tank selection position does not matter
- Water is not being drawn from the tanks
- Tank levels remain unchanged

Once mains water is disconnected and the pump is switched back on, the system will resume drawing water from the selected fresh water tank.

Connecting Mains Water

Connecting Mains Water

To connect mains water:

1. Ensure the **water pump is switched OFF**
2. Connect a **drinking-water-grade hose** to the mains water tap
3. Connect the hose to the caravan's mains water inlet
4. Slowly turn on the tap
5. Check all fittings for leaks
6. Open a tap inside the caravan to confirm water flow

Austrack recommends using a **pressure-regulated hose or in-line pressure reducer** where water pressure is unknown or high.

Disconnecting Mains Water

To disconnect mains water:

1. Turn off the water supply at the tap
2. Open a tap inside the camper to release pressure
3. Disconnect the hose from the camper inlet
4. Store hoses clean and dry
5. Switch the **water pump back ON** only if reverting to tank water use

Failing to repressurise correctly may result in air entering the system, which can be cleared using the airlock procedure outlined in the Water Pump section.

Common Issues and Owner Awareness

Common mistakes when using mains water include:

- Forgetting to turn off the water pump
- Expecting mains water to fill fresh water tanks
- Using non-potable or damaged hoses
- Exposing the system to excessive pressure

Understanding the difference between **mains water supply** and **tank-based water supply** is essential for correct system operation.

Service and Support

If issues arise such as:

- Water hammering or pulsing
- Leaks when connected to mains water
- No water flow despite correct connection
- Pump cycling unexpectedly on mains water

Austrack recommends contacting AOE RV Service Centre as the primary point of support. AOE RV Service Centre is familiar with Austrack plumbing layouts and SeaFlo inlet systems.

If AOE RV Service Centre is not accessible due to geographic location, assistance should be sought from a suitably qualified caravan or RV service technician.

IMPORTANT NOTICE

Mains water systems operate under pressure. Incorrect connection, leaving the pump switched on, or exposing the plumbing system to excessive pressure may result in damage not covered under warranty.

Always turn the water pump off when using mains water and follow correct connection procedures.

Hot Water System

Austrack campers utilise a **pressurised hot water supply** to support washing, showering, and general campsite use, with system configuration varying depending on model. Unlike fixed domestic systems, Austrack hot water solutions are selected to balance reliability, portability, and off-grid capability while integrating with the camper's onboard water supply and pressure pump.

The **Plenty X** is fitted with a **WLF hot water system**, which is permanently installed as part of the camper's plumbing infrastructure. All other Austrack camper models are supplied with an **AusTuff portable hot water system**, which is **not hard-installed** into the camper. The AusTuff unit is designed to be deployed externally when hot water is required, drawing water from the camper's pressurised system and operating independently of fixed internal plumbing.

This section outlines the operating principles, deployment considerations, and model-specific differences between installed and portable hot water systems, ensuring owners understand how hot water is generated, supplied, and safely used in all configurations.

AusTuff Portable Hot Water System

Most of our Camper Trailers, excluding the new body Plenty X, come with the AusTuff portable LPG hot water system as a standard inclusion. This is designed to work with the gas and water fittings on the drawbar of the camper to provide a hot shower for use in the ensuite.

The AusTuff hot water system is activated by water pressure, without water pressure it will not operate. You need to ensure that the water tank being drawn from is full enough to provide a consistent flow of water to the hot water system.

The full user manual can be found in the box.

Inside the hot water system box you will find hoses and fittings to connect the hot water system to the water connection on your drawbar.

All adjustments and maintenance must only be carried out by an authorised person. The installation of all gas and combustions appliances MUST comply with the standards in force.

Carbon Monoxide warning - This appliance is designed for outdoor use only and must be used in well ventilated areas. Use in enclosed areas, including inside the camper annex, may result in injury or death.

Accessible parts of the Country Comfort hot water system may be very hot, keep young children away.

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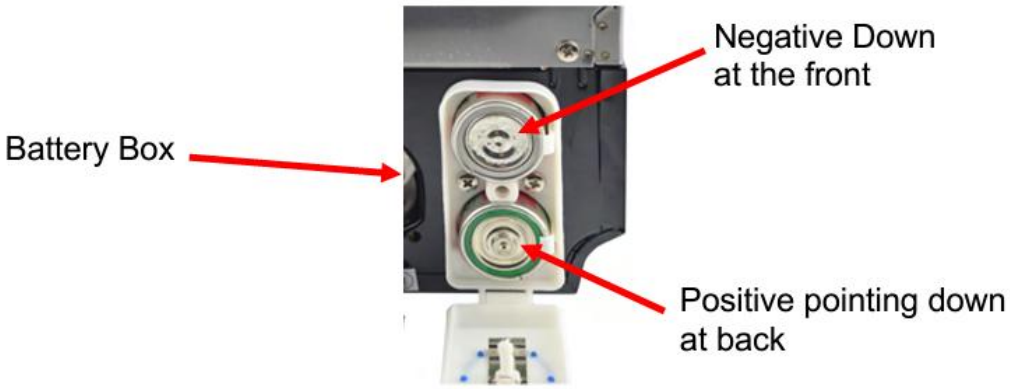
Preparing the Hot Water System for use

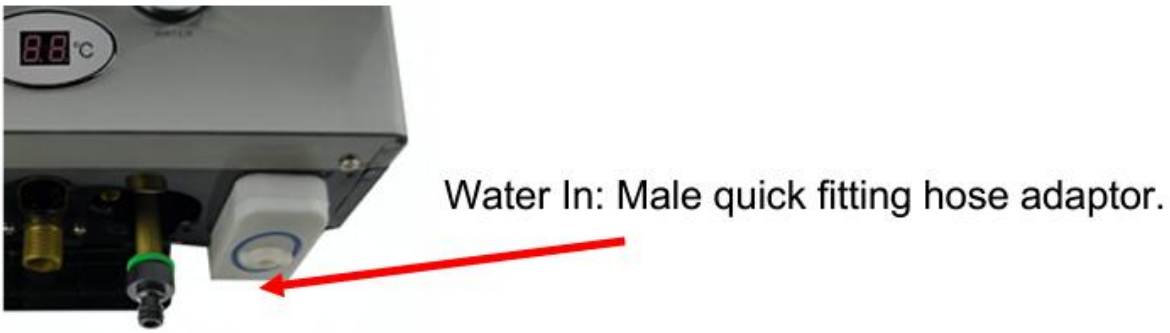
1.Remove the heater along with all the components from the box and place them on a table in front of you. Notice that there is a gas input, hot water output, cold water Input as well as a battery box.

2. Insert two 'D' batteries into the 'battery box' and close the battery box lid. Note: The orientation of the battery terminals. Positive down at the back. Negative down at the front.



For garden hose water supply use, install a male garden hose attachment to allow for a 'snap on' connection (not supplied) to a garden hose. First, install a reducer fitting to increase the 'water input' size from ½" to ¾" to suit the 'quick fitting' attachment. Male quick fitting hose adaptor (supplied)

3. Wrap the 'water input' thread with two rotations of Teflon tape before installing the reducer fitting. Tighten the adaptor, taking care not to over tighten as this could break or crack the inlet pipe. Finally, connect the male garden hose attachment.



4. Shower hose and rose: Check that the seal is secure in both ends of the flexible shower hose. Attach the shower rose to the flexible shower hose using the conical end fitting. Hand force only. Do not over tighten.

Setting Up the Hot Water System

1. Hang the appliance on a suitable vertical surface by the top hanger attached to the back cover of the heater.

2. The 'gas inlet' will be used to connect to the gas hose regulator.

3. Attach the flexible gas hose and regulator to the ‘gas inlet’. Slowly using two (2) spanners, tighten this connection, taking care not to over tighten as doing so may damage the pipe. DO NOT OVERTIGHTEN.

The hot water system is ready to connect to the water hoses.

4. Attach to other end of the flexible shower hose to the “water OUT connection (middle connection) on the water heater. Do not over tighten. Note that you can also apply Teflon tape to this threaded connection to avoid leaks.


5. Connect the bayonet end of the gas hose to the bayonet fitting on the drawbar and turn on the gas cylinder.

Operating the Hot Water System

1. It is preferable to set the BURNER control to LOW

2. IMPORTANT: It is important that when starting the appliance that the gas regulator is set to the ‘min’ position.

3. IMPORTANT: It is important that when starting the appliance that the water regulator is set to the ‘min’ position.

4. Switch LPG Water Heater ON using the rocker switch located at the bottom on the LPG Portable Water Heater. Do this by having the red dot pushed in.

5. Ensure that the button on the shower rose is in the “Off” position.

6. Open the valve for your input water source. This can come from your 12v pump or mains supply. When ready push the button “On” your shower rose. Water should start to flow through the shower unit.
7. Note: You should hear a series of clicks and then the burner should ignite. The burner flame can be seen operating through the ‘viewing window’ located at the front of the appliance.

8. Adjust the temperature of the water flowing from the showerhead by turning the ‘gas regulator’ and ‘water regulator’ knobs.

Note: For higher temperatures, increase the gas regulator control and decrease the water regulator control. Switching the BURNER control from LOW to HIGH will increase the temperature further.

A temperature in excess of 50° C will activate the Over Temperature Safety Sensor and will shut down the burners. To relight the burners, you will need to turn the water flow OFF and then back ON.

WLF Instantaneous Hot Water System – PLENTY X MODELS

Some Austrack campers such as the New Body Plenty X are fitted with a **WLF Instantaneous Hot Water System**. This system heats water **on demand**, meaning hot water is produced only when a tap is opened, rather than being stored in a tank. As a result, hot water supply is continuous (within system limits) and does not rely on stored volume.

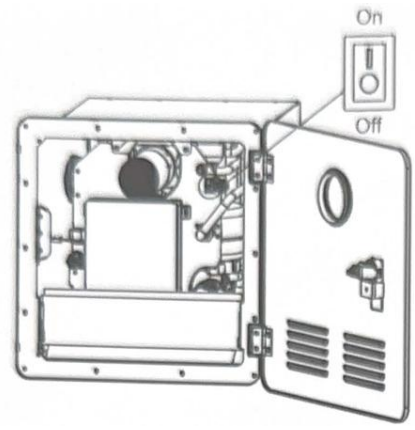
Because this system operates differently from storage-type heaters, it is important that owners understand the correct startup procedure, control operation, and temperature-setting methods before use.

System Power and Safety Isolation

The WLF hot water system includes **two separate power control points**:

1. A **master on/off switch located on the hot water unit itself**
2. A **wall-mounted control screen** used for everyday operation and temperature control

Appliance Master Switch (Kill Switch)



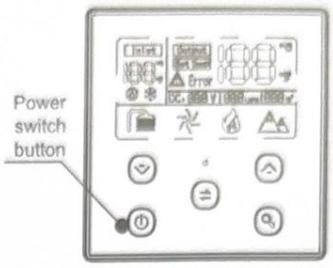
The on/off switch located in the hot water appliance acts as a **master isolation (kill) switch**. This switch:

- Supplies or isolates power to the hot water system entirely
- Should be switched **off** when the system is not required
- Should be switched **off** during long-term storage or servicing

This switch must be **turned on** before the wall controller will operate the system

Wall Mounted Control Screen

The wall-mounted control screen is used for:



- Turning the system on and off for normal use
- Setting the desired hot water temperature
- Selecting temperature display units (°C or °F)

The system must pass a basic functional check each time the caravan and water system are set up for use.

Operating the WLF Hot Water System

Powering the System On

1. Ensure the **master on/off switch on the hot water unit** is turned **ON**
2. On the wall controller, touch the **Power button**
3. The display will illuminate and show the **current temperature setting**

When powered on, the system is ready to heat water when a hot tap is opened.

Temperature Display Selection (°C / °F)

- Touch the **°C / °F button** to toggle between temperature units
- The corresponding indicator on the display will confirm the selected unit

Austrack recommends using **°C** for consistency with other systems in the caravan.

Adjusting Water Temperature

- Use the **"+" and "–" buttons** on the control screen to set the desired water temperature
- Adjustable temperature range:
    - **35 °C (95 °F) minimum**
    - **51 °C (124 °F) maximum**

The selected temperature will be maintained automatically by the system while hot water is in use.

Turning the System Off

- Touch the **Power button** on the wall controller to place the system into shutdown mode
- If the hot water system will not be used for an extended period, also switch the **master on/off switch on the unit itself to OFF**

This ensures the system is fully isolated.

Methods of Using the WLF Hot Water System

The WLF Instantaneous Hot Water System may be used in **two different operating methods**, depending on user preference.

Method 1 – Point-of-Use Mixing (Recommended)

This method involves setting the heater to a higher output temperature and mixing hot and cold water at the tap.

Procedure:

1. Set the controller temperature to approximately **46 °C (115 °F)**
2. Open the hot water tap
3. Once hot water is flowing steadily, add **cold water at the tap** to achieve a comfortable temperature

Benefits:

- More flexible temperature control
- Familiar operation for most users
- Better control at the shower or basin

Method 2 – Single-Point Use (No Mixing)

This method involves setting the heater to the exact temperature required at the tap, without mixing cold water.

Procedure:

1. Set the controller temperature to the desired bathing or washing temperature
2. Open the hot water tap only
3. The system will maintain the set temperature automatically

Important Note:
This method requires accurate temperature selection and may be more sensitive to flow rate changes.

Normal Operating Characteristics

During use, it is normal for the system to:

- Require water flow to activate heating
- Temporarily stop heating if water flow is interrupted
- Adjust heating output based on flow rate and inlet water temperature

Hot water will only be produced **when a hot tap is opened**.

Service and Support

If the WLF hot water system:

- Fails to power on
- Does not maintain temperature
- Shuts down unexpectedly
- Displays abnormal behaviour

Austrack recommends contacting AOE RV Service Centre as the primary point of support. AOE RV Service Centre is familiar with Austrack plumbing and hot water installations.

If AOE RV Service Centre is not accessible due to geographic location, assistance should be sought from a suitably qualified caravan or RV service technician.

IMPORTANT NOTICE

The WLF Instantaneous Hot Water System is designed for controlled operation with clean water and appropriate power supply. Incorrect use, failure to isolate the system when not in use, or operation without water flow may result in damage not covered under warranty.

Always ensure the system is switched off when not required.

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Chassis, Running Gear & Structural Systems

The Austrack chassis, running gear, and structural systems form the **foundation of the camper's strength, stability, and safety**, both on-road and off-road. These systems are engineered to work as an integrated package, supporting the camper's weight, managing loads during travel, absorbing terrain impacts, and maintaining structural integrity throughout setup, use, and transport. Collectively, they govern how the camper brakes, rolls, suspends, levels, and folds, and they directly influence towing performance, durability, and occupant safety.

This section covers all major underbody, suspension, and structural components, including the **braking system, wheel studs and nuts, suspension assemblies, tyres, hubs, stabiliser legs, and fold-over roof structures**. While individual components may vary slightly by model and specification, the principles of operation and required handling remain consistent across the Austrack range. Understanding these systems, their correct use, and their maintenance requirements is critical to safe operation, reliable performance, and long-term service life of the camper.

Braking Systems

Austrack caravans are fitted with **electric drum brakes**, designed to operate in conjunction with the towing vehicle's braking system to provide safe, controlled stopping performance. These brakes reduce the load placed on the tow vehicle and improve stability during braking under a wide range of conditions.

Because electric trailer brakes rely on signals from the tow vehicle, correct setup, adjustment, and ongoing maintenance are essential for safe operation.

Electric Trailer Brakes

All Austrack campers are equipped with **electric override brakes**, which require a **brake controller** to be installed and operational in the towing vehicle.

The brake controller allows the driver to:

- Control the amount of braking force applied to the camper
- Adjust braking response to suit load, road conditions, and driving style
- Manually apply trailer brakes if required

Brake controllers may be:

- Permanently installed in the tow vehicle, or
- Wireless / Bluetooth-based units mounted on the camper and controlled remotely from the driver's seat

⚠️ **Important Handover Requirement:**
A functioning brake controller **must be installed and operational** in the towing vehicle on the day of handover. Austrack units will **not be released** without confirmation that trailer braking can be controlled from the driver's position.

How Electric Trailer Brakes Work

Electric trailer brakes operate by:

1. Receiving a braking signal from the tow vehicle brake controller
2. Energising electromagnets inside the brake drums
3. Applying brake shoes against the inner surface of the drum
4. Creating controlled friction to slow the camper

This system is designed to **assist**, not replace, the tow vehicle brakes. Maximum braking performance depends on correct brake controller setup and proper brake adjustment.

Brake System Type – Drum Brakes with Brake Shoes

Austrack campers use a **12-inch electric drum brake system**, which incorporates **brake shoes** rather than brake pads.

Brake shoes are curved friction linings located inside the brake drum. When braking is applied, the shoes press outward against the inside of the drum to generate stopping force.

This design is robust and well-suited to touring and off-road use but requires periodic inspection and adjustment to maintain optimal performance.

Brake Bedding-in (Run-in Period)

New trailer brakes require an initial **bedding-in (run-in) period**.

During this period:

- Brake shoes gradually seat against the drum surface
- Braking effectiveness will increase progressively
- Brake controller settings may need adjustment

The length of the run-in period can vary depending on load and driving conditions.

Brake Inspection, Adjustment, and Servicing

Trailer brakes must be **inspected and serviced at regular intervals** to ensure safe and effective operation.

Austrack recommends that brake inspection, adjustment, and servicing be carried out **in accordance with the Camper Service Schedule**, which is located **near the end of this manual (second-last page)**.

During scheduled servicing, a qualified professional will:

- Inspect brake shoes for wear
- Check drum condition
- Confirm correct brake adjustment and operation

Brake shoes typically require replacement when:

- The friction lining is worn to approximately **1.5 mm**
- The lining shows abnormal or uneven wear

The lining is scored, cracked, or contaminated

Brake Shoe Wear, Scoring, and Gouging

Scoring or gouging of brake shoe linings may occur due to:

- Overheating from incorrect adjustment

- Prolonged heavy braking
- Dirt, sand, or debris entering the drum
- Water crossings without subsequent cleaning

After off-road use or water crossings, Austrack strongly recommends that the brakes be **cleaned and inspected** in line with the service schedule to prevent premature wear and maintain braking performance.

Service Responsibility and Safety

Both the **tow vehicle braking system** and the **camper braking system** must be properly maintained for safe towing. Trailer brakes should only be adjusted or serviced by **qualified professionals** familiar with electric drum brake systems.

Important Safety Notes

- Trailer brakes rely entirely on a functioning brake controller
- Incorrect adjustment can result in poor braking or overheating
- Reduced braking performance significantly increases stopping distance
- Operating the caravan with ineffective brakes may create unsafe towing conditions

If braking performance feels weak, inconsistent, or unpredictable, towing should be discontinued until the system has been inspected.

Service and Support

If you experience:

- Uneven braking
- Excessive brake controller settings
- Noise or heat from hubs or brakes
- Reduced braking performance

Austrack recommends contacting AOE RV Service Centre as the primary point of support. AOE RV Service Centre is familiar with Austrack chassis, axle, and braking systems.

If AOE RV Service Centre is not accessible due to geographic location, assistance should be sought from a suitably qualified caravan or trailer brake specialist.

Wheel Nuts

Wheel nuts are a **critical safety component** of the camper's running gear and must be checked and maintained correctly to ensure safe towing. Incorrect wheel nut tension or poor installation technique can lead to wheel vibration, stud damage, or wheel separation, all of which present a serious safety risk.

Austrack campers are fitted with **6-stud wheel hubs**, and correct tightening sequence and torque are essential.

Torque Specification

All wheel nuts must be tightened using a **calibrated torque wrench** to a torque setting of:

140 Nm

This torque ensures the wheel is securely seated against the hub without overstressing the studs or wheel nuts.

Use of Power Tools (Rattle Guns)

Austrack **does not recommend** using rattle guns or impact tools to tighten wheel nuts.

Rattle guns:

- Do not provide accurate torque readings
- Make it impossible to confirm correct tightening force
- Can easily over-tighten wheel nuts

Over-tightening may:

- Stretch or weaken wheel studs

- Damage wheel nuts
- Cause premature stud failure

Under-tightening may:

- Allow wheel movement
- Cause vibration
- Lead to loosening of wheel nuts
- Result in stud or nut failure over time

For these reasons, wheel nuts should always be tightened and checked using a torque wrench.

Wheel Nut Tightening Pattern (6-Stud Hubs)

Wheel nuts **must be tightened in a star (criss-cross) pattern**, not in a circular sequence.

Tightening in a star pattern:

- Ensures the wheel seats evenly against the hub
- Prevents wheel distortion
- Reduces stud stress
- Provides accurate torque readings

Checking Wheel Nut Torque (Routine Inspection)

For routine wheel nut checks:

- It is **recommended** to lightly lift the camper so that not all weight is on the wheels, if practical
- However, wheel nut torque **can still be checked with the full weight on the ground** for convenience and ease of access

When checking wheel nuts:

- Use a torque wrench set to **140 Nm**
- Do not loosen the nut first — simply confirm it is correctly torqued

- Tighten in a **star pattern**

Wheel nut checks should be performed in accordance with the recommended check schedule and more frequently during rough or corrugated road travel.

Changing a Wheel – Correct Installation and Tightening Procedure

The following procedure applies **only when fitting or refitting a wheel**, such as after a tyre change.

Wheel Installation

1. Ensure the **hub face and wheel mounting surface are clean and free of debris**
2. Lift the wheel onto the hub and confirm it sits **flush against the hub both top and bottom**
3. Install the **bottom wheel nut first** and wind it on **finger-tight all the way**
    - This supports the wheel and prevents it from popping off the hub
4. Fit the remaining wheel nuts **finger-tight only**
    - These do **not** need to be fully wound in by hand

Initial Tightening

With the camper:

- **Jacked up**, and
- **Handbrake engaged** to prevent wheel rotation,

tighten the wheel nuts evenly using a wheel brace or socket **just enough to seat the wheel firmly**, without allowing the wheel to rotate.

Final Torque Tightening

1. Lower the camper so the tyre **just contacts the ground**, but **does not carry the full weight**
2. Using a **calibrated torque wrench**, tighten the wheel nuts to **140 Nm**
3. Tighten in a **star (criss-cross) pattern**

Once complete:

- Fully lower the camper to the ground
- Remove the jack
- Recheck torque after initial travel

Use of Power Tools

Austrack **does not recommend** using rattle guns or impact tools to tighten wheel nuts.

Rattle guns:

- Do not provide accurate torque control
- Can easily over-tighten wheel nuts

Over-tightening may stretch or weaken wheel studs.
Under-tightening may cause vibration and loosening.

Always use a **torque wrench** for final tightening.

Initial Wheel Nut Check Schedule

When the camper is new, or after wheels have been removed and refitted, wheel nuts must be re-checked at:

- **50 km**
- **100 km**
- **250 km**
- **500 km**

After this period, wheel nuts should be checked regularly and more often during off-road or corrugated road travel.

Wheel Nut and Stud Variations

Wheel nut and stud sizes may vary depending on axle, hub, and wheel configuration.

If replacements are required:

- Measure existing components
- Check any size or specification markings
- Ensure replacements match the original specifications

Service and Support

If wheel nuts:

- Will not maintain correct torque
- Continually loosen
- Show signs of damage
- Are associated with vibration or noise

The caravan should be inspected before further towing.

Austrack recommends contacting AOE RV Service Centre as the primary point of support. If AOE RV Service Centre is not accessible, assistance should be sought from a suitably qualified caravan or trailer service technician.

Important Notice

Correct wheel nut torque, tightening sequence, and installation method are essential for safe towing. Damage caused by incorrect installation, tightening, or neglect may not be covered under warranty.

Always torque wheel nuts correctly before travel.

Suspension

Austrack campers are fitted with a **heavy-duty independent suspension system** designed specifically for touring and off-road conditions. The suspension system plays a critical role in ride quality, handling, tyre contact, braking effectiveness, and overall durability of the caravan.

Austrack campers utilise **AusTuff swing arm suspension**, combined with **AusTuff coil springs**, **AusTuff-supplied Pedders shock absorbers**, **limiting straps**, and **serviceable suspension bushes**.

This system is engineered to provide controlled vertical wheel movement while maintaining correct wheel alignment and stability under load.

Suspension System Components

The Austrack suspension system consists of the following primary components:

- **AusTuff Swing Arms**
- **AusTuff Coil Springs**
- **AusTuff / Pedders Shock Absorbers (Foam Cell type)**
- **Suspension Limiting Straps**
- **Serviceable Suspension Bushes**
- **Toe and Camber Adjustment Pins**

All components are designed to operate as a complete system and should not be modified independently.

AusTuff Swing Arm Suspension

Austrack campers are fitted with **AusTuff swing arms**, a robust, chassis-mounted independent suspension design.

Unlike some suspension systems that allow sideways articulation, AusTuff swing arms are designed to:

- Articulate **parallel to the chassis**
- Control **vertical wheel movement only**
- Maintain consistent wheel alignment under load

This design prioritises:

- Towing stability
- Predictable handling
- Reduced lateral stress on suspension and chassis mounting points

Coil Springs and Shock Absorbers

Camper load support is provided by **AusTuff coil springs**, which carry the weight of the camper and allow controlled suspension movement.

Damping is provided by **Pedders shock absorbers**, manufactured in partnership with AusTuff and supplied to Austrack:

- Manufactured by **Pedders**
- Distributed via **AusTuff**
- Identified by **orange paint and AusTuff branding**
- **Foam Cell shock absorbers**, suitable for off-road heat control and durability

Shock absorbers:

- Control spring movement
- Reduce bounce and oscillation
- Improve tyre contact with the ground
- Reduce shock loads transferred to the chassis

Suspension Limiting Straps

The suspension system incorporates **limiting straps** to prevent over-extension of the swing arms.

Limiting straps:

- Control maximum downward suspension travel
- Protect shock absorbers from topping out
- Reduce stress on suspension mounts
- Prevent damage during extreme articulation or uneven terrain

Limiting straps are a critical protective component and must not be removed, adjusted, or bypassed.

Suspension Bushes and Lubrication

The AusTuff swing arm suspension uses **serviceable suspension bushes** at key pivot points.

These bushes:

- Allow controlled movement of the swing arms
- Reduce vibration and wear
- Maintain correct suspension geometry

Bush Maintenance

- Suspension bushes **require regular greasing**
- Greasing reduces wear and extends bush life
- Lack of lubrication may result in:
    - Squeaking or noise
    - Accelerated wear
    - Increased suspension movement
    - Reduced ride quality

Bushes should be greased **in accordance with the Camper Service Schedule**, located **near the end of this manual (second-last page)**, and more frequently when operating in dusty, wet, or off-road environments.

Suspension Alignment – Toe and Camber

The AusTuff swing arm suspension includes **adjustment pins** that allow for:

- **Toe-in adjustment**
- **Camber adjustment**

Correct alignment:

- Improves tyre life
- Enhances tracking stability

- Maintains predictable towing behaviour

Alignment adjustments should only be carried out by **qualified caravan or suspension specialists**, as incorrect adjustment may negatively impact handling and tyre wear.

Suspension Bolt Inspection and Torque

All suspension mounting bolts must be:

- **Visually inspected regularly**
- Checked for any signs of movement, loosening, or damage

Austrack recommends a **visual inspection before travel**, particularly after off-road or corrugated road use.

Suspension mounting bolts must be tightened to:

180 Nm

⚠️ Suspension bolts must not be over-tightened or under-tightened, as incorrect torque can lead to component damage or movement.

Servicing and Maintenance

The suspension system must be serviced **in accordance with the Camper Service Schedule**, located **near the end of this manual (second-last page)**.

Scheduled servicing includes:

- Inspection of swing arms and mounting points
- Checking bolt torque
- Greasing suspension bushes
- Inspecting coil springs
- Checking shock absorbers for leaks or damage
- Inspecting limiting straps for wear or stretching

Off Road and Corrugated Road Use

After extended travel on rough, corrugated, or off-road terrain, Austrack recommends:

- Visual inspection of all suspension components
- Checking bush condition and lubrication
- Checking suspension bolt torque

Early identification of issues helps prevent more serious damage.

Important Safety Notes

- Suspension components are safety-critical and load-bearing
- Suspension modifications may affect handling and warranty
- Bush lubrication is essential for long-term reliability
- Alignment should only be adjusted by qualified professionals

If abnormal noises, uneven tyre wear, or changes in handling are observed, the suspension system should be inspected before further towing.

Service and Support

For suspension-related concerns such as:

- Noises or squeaks
- Uneven tyre wear
- Loose or damaged components
- Alignment concerns

Austrack recommends contacting AOE RV Service Centre as the primary point of support. AOE RV Service Centre is familiar with Austrack suspension geometry and AusTuff installations.

If AOE RV Service Centre is not accessible due to geographic location, assistance should be sought from a suitably qualified caravan suspension specialist.

Tyres & Wheels

Austrack caravans are fitted with **heavy-duty alloy wheels and off-road-rated tyres**, selected to suit touring, off-road travel, and Australian conditions. Correct tyre selection, inflation pressure, inspection, and maintenance are essential for safe towing, suspension performance, braking effectiveness, and long-term durability.

This section covers general information on the wheels and tyres supplied with Austrack caravans, along with essential owner responsibilities regarding their use and care.

Wheels

Austrack caravans are supplied with **alloy wheels** as standard.

Wheel characteristics:

- **Alloy construction**
- **Zero (0) offset**

A zero-offset wheel places the wheel centreline directly in line with the hub mounting surface. This configuration:

- Maintains correct suspension geometry
- Ensures even load distribution through wheel bearings and hubs
- Reduces unnecessary stress on suspension and axle components

Any replacement wheels must match the original specifications to ensure correct fitment and safe operation.

Tyres

Austrack caravans are supplied with **Goodride off-road tyres**, selected depending on model and intended use.

Standard Fitment

- **Goodride Radial M/T (Mud Terrain)** tyres are fitted to most Austrack models

These tyres are designed to:

- Provide strong off-road traction
- Resist damage from rough terrain
- Withstand extended remote touring conditions

Tyre fitment may vary depending on model and build specification.

Tyre Pressure Guidelines

Correct tyre pressure is critical for safety and performance and must always be adjusted to suit conditions and load.

Standard Road Use

Under **normal conditions on sealed roads**, Austrack recommends:

Minimum tyre pressure: 50 PSI

This pressure is suitable when:

- Travelling on sealed roads
- Carrying typical touring loads
- Operating under standard conditions

Tyre pressures **must not be set below 50 PSI for sealed road use**, as under-inflation can lead to excessive heat build-up, irregular wear, reduced handling, and increased risk of tyre failure.

Off Road and Variable Conditions

Tyre pressures may need to be **adjusted from the standard road setting** when:

- Travelling off-road or on corrugated surfaces
- Driving on sand, gravel, or uneven terrain
- Operating with unusually heavy or light loads

Pressure adjustments should be made with care and only within appropriate limits based on:

- Tyre manufacturer recommendations
- Load carried

- Speed and terrain

Tyres should be returned to **road-appropriate pressures** before resuming sealed road travel.

Tyre Inspection and Care

Tyres should be inspected regularly for:

- Tread depth and even wear
- Cuts, cracks, or damage to sidewalls
- Embedded stones or debris in tread blocks
- Signs of pressure loss

After off-road or corrugated travel, Austrack recommends:

- Visual inspection of all tyres
- Pressure checks
- Re-checking wheel nut torque

Tyre Rotation and Replacement

Tyres should be:

- Rotated periodically to promote even wear
- Replaced when tread depth approaches legal or manufacturer limits
- Replaced immediately if damaged beyond safe repair

Replacement tyres should:

- Match the original size and load rating
- Be suitable for caravan use
- Maintain compatibility with suspension and braking systems

Compatibility and Changes

Changing tyre or wheel specifications may affect:

- Suspension geometry
- Wheel bearing and hub life
- Braking performance
- Towing stability

Austrack recommends consulting **AOE RV Service Centre** before changing wheel or tyre specifications. If AOE RV Service Centre is not accessible, seek advice from a suitably qualified caravan or tyre specialist.

Service and Support

If you experience:

- Uneven tyre wear
- Vibration while towing
- Repeated pressure loss
- Damage after off-road travel

Austrack recommends contacting AOE RV Service Centre as the primary point of support. If AOE RV Service Centre is not accessible due to geographic location, assistance should be sought from a suitably qualified caravan or tyre professional.

IMPORTANT NOTICE

Tyres and wheels are safety-critical components. Incorrect tyre pressures, incompatible replacements, or neglect may result in reduced handling, increased stopping distances, or tyre failure.

Always maintain correct tyre pressures for the conditions and inspect tyres before travel.

Hubs

The wheel hubs fitted to Austrack campers are a **critical mechanical component**, supporting the wheels, housing the braking system, and allowing the caravan to roll smoothly under load. The hub

assembly also plays a central role in braking performance, wheel alignment, and overall towing safety.

Austrack caravans utilise **traditional trailer hub assemblies with electric drum brakes**, incorporating **TIMKEN tapered roller bearings**. Correct inspection, lubrication, and servicing of the hubs and bearings is essential to safe and reliable operation.

Hub and Bearing Design

Austrack hubs are fitted with **TIMKEN tapered roller bearings**, chosen for their durability, load-carrying capability, and reliability in touring and off-road conditions.

These bearings:

- Support the weight of the caravan
- Allow the hub and wheel to rotate smoothly
- Maintain correct hub alignment under load
- Form an integral part of the hub assembly

The hub is retained on the spindle by the **inner and outer bearings**, meaning the bearings physically **locate and secure the hub in position**.

Brake Drum and Hub Relationship

Austrack campers are fitted with **drum brakes**, with the brake drum integrated into the hub assembly.

Important points to understand:

- The **brake drum cannot be removed independently of the hub**
- To remove the brake drum, the **hub must be removed from the spindle**
- To remove the hub, the **outer bearing must first be removed**
- Brake shoe inspection, drum inspection, or replacement requires hub and bearing removal

Because of this design, **hub, bearing, and brakes are all serviced together**.

TIMKEN Bearings – Inspection and Maintenance

The TIMKEN bearings used in Austrack hubs are **serviceable bearings**, meaning they require:

- Periodic inspection
- Cleaning
- Re-greasing
- Correct re-adjustment during reassembly

Bearing maintenance is essential to:

- Prevent overheating
- Avoid premature wear or failure
- Maintain safe braking and wheel operation

Service Intervals

Hub and bearing servicing must be carried out in accordance with the **Camper Service Schedule**, located **near the end of this manual (second-last page)**.

This includes:

- Bearing inspection
- Bearing cleaning and re-greasing
- Seal replacement if required
- Hub nut adjustment
- Brake inspection while hubs are removed

Failure to service hubs at the required intervals may lead to bearing failure, wheel loss, or brake damage.

Signs of Hub or Bearing Issues

Owners should be alert for early warning signs of hub or bearing issues, including:

- Excessive heat from a hub after travel
- Grinding, rumbling, or squealing noises
- Grease leakage from the hub or seal
- Wheel play when rocked by hand
- Vibration or resistance while towing

If any of these symptoms are observed, **do not continue towing** until the issue has been inspected.

Owner Responsibility and Limitations

While owners may visually inspect hubs and check for heat during stops, **hub disassembly and bearing servicing should only be performed by qualified professionals**.

Incorrect bearing adjustment or contamination can:

- Cause rapid bearing failure
- Damage the hub or spindle
- Result in wheel loss
- Compromise braking performance

Austrack does not recommend owners attempt bearing removal or hub disassembly without proper tools, training, and experience.

Post Trip Inspection Recommendations

After off-road travel, water crossings, or extended corrugated road use, Austrack recommends:

- Visual inspection of hubs and seals
- Checking for grease leakage
- Feeling hubs for abnormal heat during stops

Water crossings in particular can introduce moisture into bearings, which may require earlier servicing.

Service and Support

For any concerns related to:

- Hub heat
- Bearing noise
- Grease leakage
- Brake inspection requiring hub removal

Austrack recommends contacting AOE RV Service Centre as the primary point of support. AOE RV Service Centre is familiar with Austrack hub, brake, and bearing assemblies and their correct service procedures.

If AOE RV Service Centre is not accessible due to geographic location, assistance should be sought from a suitably qualified caravan, trailer, or bearing service technician.

Important Notice

Hub and bearing systems are safety-critical. Damage caused by lack of lubrication, incorrect adjustment, contamination, or improper servicing may not be covered under warranty.

Always service hubs and bearings in accordance with the service schedule and ensure only qualified personnel perform disassembly and adjustment.

Stabiliser Legs

Austrack campers are fitted with **four stabiliser legs**:

- **Two stabiliser legs at the front**, and
- **Two stabiliser legs at the rear**

These stabiliser legs are designed to **reduce movement and increase stability** once the caravan has been correctly positioned and levelled at camp. They are **not designed to level the camper or support load**, and must only be used for stabilisation purposes.

Levelling the Caravan (Before using Stabiliser Legs)

Correct levelling **must be completed before** deploying the stabiliser legs.

Side-to-Side Levelling

- Use **levelling ramps** if side-to-side adjustment is required
- Stabiliser legs must **never** be used to correct side-to-side level

Front-to-Back Levelling

- Front-to-back levelling is achieved using the **jockey wheel**
- Adjust the jockey wheel until the caravan is level

Once the caravan is correctly levelled, the stabiliser legs may be deployed.

Operating the Stabiliser Legs

After levelling:

1. Lower the **front stabiliser legs** until they firmly contact the ground
2. Lower the **rear stabiliser legs** until they firmly contact the ground
3. Adjust each leg evenly so they provide **light support only**

The stabiliser legs are designed to:

- Reduce movement when walking inside the caravan
- Improve stability during general use
- Increase comfort when set up at camp

They are **not designed to lift, level, or carry the weight of the caravan**.

What Stabiliser Legs Must NOT Be Used For

⚠️ Stabiliser legs must **never** be used for:

- Levelling the camper

- Lifting the camper
- Supporting axle or suspension weight
- Changing wheels or tyres

Using stabiliser legs for any of the above purposes may result in damage to the legs, mounting points, or chassis.

Use of Power Tools (Strictly Prohibited)

Austrack **does not permit the use of drills, rattle guns, or any power tools** to raise or lower stabiliser legs.

Using power tools:

- Can damage internal gears and threads
- May cause uncontrolled movement
- Will **void the stabiliser leg warranty**

Stabiliser legs must always be adjusted **by hand only**.

Retracting Stabiliser Legs Before Travel

Before towing the caravan:

- Fully retract **all four stabiliser legs**
- Confirm they are secured in the stowed position
- Ensure no part of the legs is hanging below the chassis

Failure to fully retract stabiliser legs before travel may cause serious damage.

Inspection and Care

Stabiliser legs should be:

- Visually inspected during setup and pack-down

- Checked for smooth operation
- Inspected after rough or off-road travel

If a stabiliser leg becomes stiff, bent, or difficult to operate, it should not be forced.

Service and Support

If stabiliser legs:

- Will not extend or retract smoothly
- Appear bent or damaged
- Do not provide stable support

Austrack recommends contacting AOE RV Service Centre as the primary point of support. If AOE RV Service Centre is not accessible, assistance should be sought from a suitably qualified caravan service technician.

IMPORTANT NOTICE

Stabiliser legs are designed solely to reduce caravan movement when stationary. Damage caused by misuse, over-loading, levelling attempts, or power tool use may not be covered under warranty.

Always level the caravan correctly before deploying stabiliser legs and operate them by hand only.

Fold Over Roof System

Austrack Hard Floor campers utilise a **fold-over roof system** that performs a **dual structural function** within the overall camper design. In the closed position, the roof forms part of the camper's rigid, weather-sealed external shell for travel. Once deployed at camp, the fold-over roof transitions into a **primary load-bearing bed base**, forming the structural foundation for the front sleeping area and, where applicable, the rear sleeping area.

Unlike a roof panel that is purely protective, the Austrack fold-over roof is an **integral structural component** when the camper is set up. Correct operation, proper sequencing, and secure engagement of all retaining mechanisms are critical for both occupant safety during use and mechanical security during transport.

Structural Function and Design

The fold-over roof assembly is engineered as a **reinforced structural panel** capable of supporting evenly distributed sleeping loads when deployed. In the closed position, it contributes to overall body rigidity, protects internal components from dust and weather ingress, and resists vibration and aerodynamic loads during towing.

When opened and folded into position:

- The roof becomes the **bed base structure**
- Loads are transferred into the camper body and supporting framework
- Structural stability is achieved through correct engagement at all support and restraint points

The system relies on reinforced hinge lines, structural contact interfaces, and controlled restraint mechanisms rather than freestanding legs or removable supports.

Front Bed Section – Support, Securing, and Winch Assistance

When the fold-over roof is deployed forward to form the **front bed**, it is structurally supported by the **front of the camper body** and restrained using the securing system appropriate to the specific model.

On newer models, including current Plenty X variants, the front bed section is secured using a **hand-operated webbing winch system**. This winch utilises a **reinforced woven strap**, similar in construction to automotive seat-belt material, rather than rope or steel cable. This webbing design provides smooth operation, controlled tensioning, and reduced risk of shock loading.

In this configuration:

- The winch is operated manually by hand
- The webbing strap applies controlled tension to pull the roof section into its fully seated position
- Once tensioned, the winch holds the bed base firmly against its support points, preventing lift, movement, or flex during use

The front winch may also be used to **assist with roof movement during setup**, allowing the roof section to be raised, guided, and folded into the open position in a controlled and progressive manner.

On older Plenty X models, the front bed section is secured using **over-centre latches**. These latches mechanically clamp the folded roof down onto its support points. All latches must be fully engaged before the bed is used.

Regardless of securing method, the front bed must be fully seated, evenly supported, and correctly restrained before bedding is installed or weight is applied.

Rear Fold Sections – Applicable Models and Winch Assistance

On models fitted with **rear fold-out bed sections**, the rear portion of the fold-over roof system also forms part of the sleeping platform when deployed.

When opened:

- Rear fold sections rely on their designated support structures
- These may include structural rear frames or support interfaces
- The rear fold must be secured and supported as previously outlined in the applicable setup section

Roof and Bed Retention During Travel

When the camper is packed down for travel, all fold-over roof sections are returned to their closed position and must be positively restrained to prevent movement under vibration, wind load, acceleration, or braking.

In the closed (travel) position:

- Roof panels are held down using **over-centre latches**
- These latches secure the roof panels against the camper body
- All latches must be fully engaged before towing

On **X models**, including the Plenty X:

- The roof system is **further restrained by the boat rack assembly**
- When folded down and secured, the boat rack provides an additional mechanical retention point
- This secondary restraint enhances security and reduces load on primary latching points during transport

Operational Sequencing and Controlled Movement

Because the fold-over roof transitions from an external roof to a load-bearing bed base, correct operation depends heavily on **proper sequencing and controlled movement**.

Depending on model specification, roof movement may be achieved:

- Manually, using steady and balanced force, or
- With **hand-operated webbing winch assistance**, where fitted

Winches are designed to provide mechanical advantage and controlled positioning. They must never be used to overcome resistance caused by misalignment, obstruction, or incorrect setup sequence. Any resistance indicates an issue that must be corrected before proceeding.

Interaction with Canvas and Internal Components

During opening and closing, the fold-over roof interacts directly with internal canvas, bedding, and support structures.

To prevent damage:

- Canvas must be guided into its natural fold paths
- No fabric should be trapped between structural or sealing surfaces
- Bedding and soft items must be packed within allowable height limits prior to closure

Correct handling is essential to maintain weather sealing, smooth operation, and long service life.

Load and Usage Limitations

Once deployed and correctly secured, the fold-over roof is designed to support **normal sleeping loads**, evenly distributed across the bed base.

The roof system is **not designed for**:

- Standing or walking on roof panels
- Point loading
- Supporting concentrated or dynamic loads

Misuse may result in structural damage.

Inspection and Ongoing Care

Owners should periodically inspect all fold-over roof components, including:

- Hinges and pivot points
- Webbing winch straps and anchor points (where fitted)
- Over-centre latches
- Bed support interfaces
- Signs of misalignment, uneven seating, or abnormal wear

Any unusual resistance, noise, or difficulty in operation should be investigated before further use.

IMPORTANT NOTICES

- The fold-over roof forms the **bed base once deployed**
- Front beds are supported by the camper body and secured by **hand-operated webbing winch or over-centre latches**, depending on model
- Winches may be used to assist opening and closing where fitted
- Rear fold sections must only be used when fully supported and secured
- All roof panels must be fully latched before travel
- On X models, the **boat rack provides additional roof retention**
- The roof must never be forced into position
- Damage caused by incorrect operation may not be covered under warranty

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Care Advice

Regular care and maintenance of your Austrack camper will help preserve its appearance, durability, and functionality over time. Touring environments, weather conditions, and storage methods can all affect the condition of the caravan if not managed correctly.

This section outlines general care recommendations for key external and internal areas of the caravan and should be followed as part of normal ownership.

External Paint

The external surfaces of the camper require regular care, similar to that of a tow vehicle.

Austrack recommends:

- Washing using **mild, ammonia-free detergents**
- Using a **non-abrasive sponge or wash pad**
- Rinsing thoroughly to remove dirt, dust, and contaminants

Only **wax-based polishes** should be used on the exterior finish.

Do **not** use:

- Cutting compounds
- Abrasive polishing pastes
- Harsh or aggressive cleaners

These products can scratch the surface and may expose the underlying material, leading to premature wear or damage.

Corrosion Protection

Australia offers some of the most unique and remote touring environments, however many of these conditions are harsh on vehicles and trailers.

Beach driving and water crossings are particularly aggressive due to:

- Salt exposure
- Moisture retention
- Sand and debris accumulation

After any water crossing or beach driving, it is essential that the caravan is:

- Thoroughly cleaned **from top to bottom**
- Flushed underneath, including the **chassis and running gear**

After all uses of the camper, Austrack recommends a complete clean both internally and externally to maintain condition and prevent long-term issues.

Protective products such as **Lanotec, WD-40, and Inox** are suitable for protecting exposed metal fittings and components. These products should be applied regularly to assist with corrosion prevention.

Internal surfaces

Benchtops, walls, and other solid internal surfaces should be cleaned using:

- A soft, damp cloth
- Mild detergent where required

Do **not** use:

- Ammonia-based cleaners
- Caustic or abrasive products

Incorrect cleaning agents may damage finishes and surface coatings.

Condensation and Mould

Condensation is a normal occurrence in Australia, particularly when camping. Temperature differences between inside and outside the camper, combined with ambient humidity and the compact nature of campers, can result in condensation forming overnight.

This is normal behaviour and not a fault.

To manage condensation:

- Ensure adequate **airflow inside the camper**
- Use vents, windows, and openings where appropriate
- Avoid sealing the caravan completely overnight

If condensation builds up, it should be:

- Wiped down in the morning
- Managed promptly to prevent moisture absorption into soft furnishings, particularly mattresses

Austrack recommends placing **moisture-absorbing tubs** inside the camper during storage. These should be checked and replaced regularly to reduce the risk of mould growth.

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Setting Up Your Campsite

Correct campsite selection and setup are essential for comfort, safety, and the proper operation of your Austrack camper. Taking the time to choose a suitable location and position the camper correctly will reduce stress on components, improve water management, and ensure a more enjoyable stay.

This section outlines key considerations for selecting a campsite, positioning the camper, and planning where to camp.

Selecting a Suitable Campsite

When choosing a campsite, aim to select an area that is:

- **Relatively level**, minimising the amount of levelling required
- **Firm and stable**, capable of supporting the weight of the caravan
- **Exposed to sunlight during the day**, particularly when relying on solar charging
- **Clear of large overhanging trees**, especially gum trees

Avoid setting up directly under large trees, as falling branches, sap, leaves, and bird droppings can cause damage to exterior surfaces and increase cleaning requirements.

Water Run-Off Considerations

When positioning the camper, it is important to:

- Set the camper close to level for comfort and correct system operation
- Maintain a **small amount of run-off toward the rear** of the caravan

A slight rearward fall helps ensure rainwater drains correctly and does not pool on the roof, reducing the risk of standing water or debris buildup.

Free Camping Safety Considerations

When free camping, additional care must be taken when selecting a site.

Do **not** set up:

- Too close to rivers, creeks, or watercourses
- In low-lying areas where water may collect
- In locations prone to **flash flooding**, even if conditions appear dry at the time

Weather conditions upstream can change quickly, and water levels may rise unexpectedly.

Final Positioning Before Setup

Before beginning the full setup of the camper:

- Confirm the position allows for safe levelling
- Ensure there is adequate clearance around the caravan for doors, awnings, and access
- Consider prevailing wind direction and weather exposure
- Check that ground conditions are suitable for stabiliser legs and steps

Once the caravan is correctly positioned, normal setup procedures such as levelling, deploying stabiliser legs, and operating onboard systems can be carried out.

Finding and Booking Campsites

Planning ahead and selecting approved campsites helps ensure a safe, enjoyable, and environmentally responsible camping experience. When travelling in unfamiliar areas or outside of caravan parks, it is important to confirm land access permissions and campsite suitability before setting up.

One option available to Austrack owners is **Hipcamp**, an online platform that allows users to:

- Discover campsites across Australia
- Book private and hosted camping locations
- Access property-based campsites not available through traditional caravan parks
- Review site descriptions, access conditions, and terrain suitability before arrival

Hipcamp can be particularly useful when travelling off the beaten track or when seeking unique camping locations with clear permission to stay.

Austrack encourages owners to ensure any campsite selected:

- Is suitable for caravan access and size
- Permits overnight stays
- Provides guidance on setup requirements and ground conditions

Regardless of how a campsite is sourced, always follow local rules, landowner instructions, and leave the site as it was found.

IMPORTANT NOTICE

Poor campsite selection or incorrect positioning can lead to water pooling, discomfort, unnecessary stress on the caravan structure, or safety risks. Owners are responsible for ensuring the campsite selected is suitable for both the environment and the caravan.

Always assess conditions carefully before setting up.

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Troubleshooting

Category	Issue	Troubleshooting Steps
Electrical – Air Conditioning	A/C not turning on	• Check 240 V mains power is connected • Check RCD not tripped on incoming power supply • Check RCD not tripped inside the caravan • Replace A/C remote control batteries • Contact AOE RV Service Centre or Dometic service
Electrical – Air Conditioning	A/C not cooling or heating	• Confirm correct mode is selected (❄ Cooling / ☀ Heating) • Check temperature setpoint • Ensure doors and windows are closed • Contact AOE RV Service Centre or Dometic service
Electrical – 12 V	Not charging from 240 V	• Check mains power is connected • Check RCD not tripped externally • Check RCD not tripped inside the caravan • Check charger is plugged in and switched on near batteries • Ensure batteries are above 10 V • Contact AOE RV Service Centre
Electrical – 12 V	No 12 V power	• Ensure main 12 V master switch is ON • Check battery charge level • Inspect fuse box for blown fuses
Electrical – 12 V	Power dropping quickly	• Ensure inverter is not left ON continuously • Ensure breakaway pin is correctly installed on drawbar • Reduce unnecessary lighting and appliance use when off-grid • Check fridge temperature settings and lid usage

Electrical – Inverter	No power at remote	• Ensure inverter rocker switch is set to REM / "=" position
Electrical – Inverter	No power at inverter	• Ensure battery voltage is at least 12.2 V • Check inverter RCD has not tripped
Electrical – Inverter	Inverter shuts off under load	• Reduce appliance load • Ensure total appliance wattage is below inverter capacity
Electrical – Solar	No solar charging	• Ensure solar panels are clean and unshaded • Check system display for solar input • Confirm daylight conditions • Note: Rear Anderson solar requires a regulator
Electrical – Anderson Plug	No charging via rear Anderson	• Ensure external solar panel is regulated • Check 50 A DC circuit breaker inside electrical compartment • Inspect Anderson plug and wiring
Water System	No water to taps	• Ensure water pump is ON • Confirm selected tank contains water • Change freshwater tank selection • Run tap for 20 seconds to clear air
Water System	Water pump not turning on	• Ensure pump switch is ON • Check 12 V power supply • Inspect pump fuse
Water System	Pump running continuously	• Confirm selected tank contains water • Clear airlocks by opening all taps fully • Purge hot water system • Inspect for leaks in cupboards and under seats • Contact AOE RV Service Centre
Mains Water	No water on mains water	• Ensure water pump is switched OFF • Confirm water tap is turned on • Check hose and inlet for blockages

Hot Water – WLF	No hot water	• Ensure master switch at heater is ON • Check wall controller power and temperature setting • Ensure sufficient water flow
Gas System	External cooker not lighting	• Ensure bayonet hose is connected correctly • Check gas hose is not kinked • Confirm gas in selected cylinder • Ensure correct cylinder selected on regulator • Hold knob down to purge air
Gas System	No spark at cooktop	• Ensure ignition power cable is connected • Ensure 12 V system is ON
Gas System	Flame will not stay lit	• Check gas supply level • Reduce wind exposure • Hold ignition button for 2 seconds after ignition
Fridge	Not switching on	• Ensure fridge switch is ON • Check fuse in fuse box • Try a different power lead • Check fuse in cigarette plug
Fridge	E1 error code	• Ensure fridge is set to VL mode • Confirm battery voltage above 12.0 V • Use Anderson lead where applicable
Diesel Heater	Will not start	• Ensure sufficient diesel fuel • Check battery voltage • Prime fuel line if system ran dry
Diesel Heater	Shuts down or faults	• Check air inlet and exhaust for blockage • Review fault code on controller • Contact AOE RV Service Centre
Windows & Skylights	Blinds or screens damaged	• Ensure blinds and screens are OPEN during travel • Do not force damaged mechanisms

Stabiliser Legs	Difficult to operate	• Ensure legs are not under load • Operate by hand only (no power tools) • Inspect for bending or impact damage
Suspension & Wheels	Vibration while towing	• Check wheel nut torque (140 Nm, star pattern) • Inspect tyres and suspension visually • Contact AOE RV Service Centre
Hubs & Bearings	Hub hot to touch	• Stop towing immediately • Allow hub to cool • Do not continue until inspected

For any further issues or troubleshooting, please call the Service & Warranty department.

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Warranty T&C's

The following relates to warranties offered by Auscamper Pty Ltd (**Austrack Campers**). Please read this information carefully, and should you have any questions, please contact Austrack Campers Head Office by telephone: (07) 5498 3888 or email: service@austrackcampers.com.au.

By purchasing an item from Austrack Campers, you agree to all terms and conditions of warranty below. Austrack Campers registered business address is 73 Lear Jet Drive, Caboolture, QLD, 4510.

Trailer Limited Warranty

Austrack Campers warrants to the original retail purchaser that this Austrack Campers product is free from defects in material and workmanship under normal use and maintenance from the date of retail purchase for the applicable Warranty Period. This Warranty may not be transferred to any subsequent purchaser of this Austrack Campers product. Certain components (e.g., wheel bearings) are excluded from coverage, and other limitations apply, as described in this document. Austrack Campers will repair or replace at its discretion, any defective product or part covered by the Limited Warranty, free of charge at any authorised Austrack Campers outlet using original OEM Austrack Campers replacement parts, subject to the limitations and exclusions described below. Austrack Campers does not offer an over-the-counter exchange program.

Disclaimers, limitations and exclusions:

1. **WARRANTY DISCLAIMER**. THIS LIMITED WARRANTY IS THE SOLE EXPRESS WARRANTY PROVIDED BY AUSTRACK CAMPERS AND THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, EXCEPT AS MAY BE PROVIDED BY AUSTRALIAN CONSUMER LAW. THIS WARRANTY IS GIVEN ONLY BY AUSTRACK CAMPERS, AND MAY BE MODIFIED ONLY BY AUSTRACK CAMPERS. THIS LIMITED WARRANTY IS THE FINAL EXPRESSION OF OUR AGREEMENT AND IS A COMPLETE AND EXCLUSIVE STATEMENT OF THE TERMS OF THAT AGREEMENT. THIS LIMITED WARRANTY GIVES YOU SPECIFIC RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS UNDER AUSTRALIAN CONSUMER LAW.

   For hybrid campers and campers trailers the warranty period is **12 months** except for Austrack Campers' hybrid campers and camper trailer's draw bar and chassis which are covered by a **lifetime** structural warranty for **fatigue only**.

2. **LIMITED DURATION**. ANY WARRANTY THAT MAY BE IMPLIED BY LAW (INCLUDING ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE AND IMPLIED WARRANTY OF MERCHANTABILITY) IS LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD UNDER THIS LIMITED WARRANTY.

3. **CERTAIN OTHER COMPONENTS ARE NOT COVERED**. THIS LIMITED WARRANTY DOES NOT COVER ANY OF THE FOLLOWING:

   Expendable Parts. This limited warranty does not cover general maintenance parts and items ("Expendable Parts"), including without limitation wheel bearings, bulbs, filters, tires, drainage hoses.

4. **OWNERS (YOUR) RESPONSIBILITIES**. To preserve your rights under this Limited Warranty, you must exercise reasonable care and use of the product, including following the preventative maintenance schedule and storage.

   In addition, you must cease using the product immediately upon any failure or damage. The product should be taken to an authorised Austrack Campers outlet prior to any further use.

5. **Damages resulting from normal aging, wear and tear or neglect are not covered**. The limited Warranty does not cover damage other than that resulting from defects in material or workmanship. The following are NOT considered defects in material or workmanship, and therefore are NOT covered:

   a) tyres damaged by external punctures.

   b) damage to undercarriage by way of contact with rocks, or other structures; and

   c) natural discoloration of materials due to ultraviolet light.

6. This Limited Warranty does not cover damages, malfunctions or failures resulting from abuse or neglect of the product related to or including any of the following:

a) failure to provide or perform required maintenance services as prescribed.

b) abuse, neglect, misuse, modifications, alterations, normal wear, improper servicing, use of unauthorised attachments, lack of lubrication.

c) damage to stabiliser legs or jockey wheels because of incorrect operation or failure to raise prior to movement.

d) tampering with manufacturer fitted safety devices.

e) any removed/damaged air vents, excessive dirt, abrasives, salt water, moisture, corrosion, rust, varnish or any other adverse reaction due to incorrect storage procedures.

f) failures due to improper set up, repair by anyone other than an authorised Austrack Campers outlet during the warranty period; and

g) continued use of the product after initial operational problem or failure occurs.

Canvas Limited Warranty

Austrack Campers warrants to the original retail purchaser that this Austrack Campers product is free from defects in material and workmanship under normal use and maintenance from the date of retail purchase for the applicable Warranty Period. This Warranty may not be transferred to any subsequent purchaser of this Austrack Campers product. Certain components (e.g., Zippers) are excluded from coverage, and other limitations apply, as described in this document. Austrack Campers will repair or replace at its discretion, any defective product or part covered by the Limited Warranty, free of charge at any authorised Austrack Campers outlet using original OEM Austrack Campers replacement parts, subject to the limitations and exclusions described below. Austrack Campers does not offer an over-the-counter exchange program.

Disclaimers, limitations and exclusions:

1. **WARRANTY DISCLAIMER**. THIS LIMITED WARRANTY IS THE SOLE EXPRESS WARRANTY PROVIDED BY AUSTRACK CAMPERS AND THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, EXCEPT AS MAY BE PROVIDED BY AUSTRALIAN CONSUMER LAW. THIS WARRANTY IS GIVEN ONLY BY AUSTRACK CAMPERS, AND MAY BE MODIFIED ONLY BY AUSTRACK CAMPERS. THIS LIMITED WARRANTY IS THE FINAL

EXPRESSION OF OUR AGREEMENT AND IS A COMPLETE AND EXCLUSIVE STATEMENT OF THE TERMS OF THAT AGREEMENT. THIS LIMITED WARRANTY GIVES YOU SPECIFIC RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS UNDER AUSTRALIAN CONSUMER LAW.

The warranty period for all Canvas products is **12 months** from the **date of purchase**.

2. **LIMITED DURATION**. ANY WARRANTY THAT MAY BE IMPLIED BY LAW (INCLUDING ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE AND IMPLIED WARRANTY OF MERCHANTABILITY) IS LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD UNDER THIS LIMITED WARRANTY.

3. **CERTAIN OTHER COMPONENTS ARE NOT COVERED**. THIS LIMITED WARRANTY DOES NOT COVER ANY OF THE FOLLOWING:

   Expendable Parts. This limited warranty does not cover general maintenance parts and items ("Expendable Parts"), including without limitation zippers, mesh, aluminium poles, screens.

4. **OWNERS (YOUR) RESPONSIBILITIES**. To preserve your rights under this Limited Warranty, you must exercise reasonable care and use of the product, including following the preventative maintenance schedule and storage.

   In addition, you must cease using the product immediately upon any failure or damage. The product should be taken to an authorised Austrack Campers outlet prior to any further use.

5. **Damages resulting from normal aging, wear and tear or neglect are not covered**. The limited Warranty does not cover damage other than that resulting from defects in material or workmanship. The following are NOT considered defects in material or workmanship, and therefore are NOT covered:

   a) canvas damaged by storm or acts of nature.

b) failure to air canvas after becoming wet; and

c) natural discoloration of materials due to ultraviolet light.

6. This Limited Warranty does not cover damages, malfunctions or failures resulting from abuse or neglect of the product related to or including any of the following:

   a) failure to provide or perform required maintenance services as prescribed in the Maintenance Schedule.

   b) abuse, neglect, misuse, modifications, alterations, normal wear, improper servicing, use of unauthorised attachments.

   c) failures due to improper set up, repair by anyone other than an authorised Austrack Campers outlet during the warranty period; and

   d) continued use of the product after initial operational problem or failure occurs.

Australian Consumer Law Prevails

Austrack Campers consumers have rights under the *Competition and Consumer Act 2010* (Cth), which includes the *Australian Consumer Law 2010* (Cth) and accompanying regulations. Austrack Campers notes that these warranty terms act as an express warranty and do not impact any consumer rights under the relevant legislation. If an inconsistency emerges between these express warranties and any right under law, then the relevant law will prevail.

Austrack Campers also notes that the benefits conferred by this Warranty Terms are in addition to other rights and remedies of the consumer under a law in relation to the goods or services to which the warranty relates.

Our goods and services come with guarantees that cannot be excluded under the Australian Consumer Law. For major failures with the service, you are entitled:

1. to cancel your service contract with us; and

2. to a refund for the unused portion, or to compensation for its reduced value.

You are also entitled to choose a refund or replacement for major failures with goods. If a failure with the goods or a service does not amount to a major failure, you are entitled to have the failure rectified in a reasonable time. If this is not done, you are entitled to a refund for the goods and to cancel the contract for the service and obtain a refund of any unused portion. You are also entitled to be compensated for any other reasonably foreseeable loss or damage from a failure in the goods or service.

Exclusions

Items not covered under warranty include:

1. rust.
2. wheels and tyres.
3. paint.
4. travel covers and straps; and
5. general consumables (bearings, light bulbs etc).

Factory Seconds, Ex-Demonstration and Damages Goods

Occasionally, Austrack Campers may offer items for sale deemed to be “factory seconds”, “ex-demonstration”, or “damaged”. Such items are sold on an “as is” basis.

No warranties, refunds, credits, exchanges or similar associated apply to “factory seconds”, “ex-demonstration”, or “damaged” items. Upon selling these items, Austrack Campers will attempt to provide all relevant information with regards to the item, including faults, defects, or similar. Note, there may be instances where minor defects or imperfections have been overlooked. Understand this is unintentional and in no way alters the nature of the sale.

"Ex-demonstration", "factory seconds" or "damaged", due to their nature, it is reasonable to expect that some imperfections or flaws may exist including were not initially apparent. By purchasing a "factory seconds", "ex-demonstration", or "damaged", you agree to this statement in full and accept that there are no warranties implied or expressed.

Claims Validity

1. Warranties are only available to the original purchaser of the item.
2. Warranties are valid from the original date of purchase only.
3. Warranties apply only to items sold as "new".
4. Warranties do not extend to items deemed to be "factory seconds", "ex-demo" or "damaged". Unless specifically stated otherwise by Austrack Campers in writing, warranties will only apply to items as expressed in Claims Validity 1, 2 and 3 above.
5. Warranties do not apply to items sold via auction.
6. Warranties are not transferable under any circumstances.
7. Should an item be sold by the original purchaser to a third party, all warranties immediately become null and void. The original purchaser will make no claims or be eligible for any claims on behalf of the new owner.
8. Warranties do not extend to any products purchased from Austrack Campers that are used in hire schemes or as rentals.
9. Austrack Campers will not cover damage caused as a result of unauthorised modifications, misuse, abuse, incorrect assembly, improper and irregular maintenance, or accident or collision.
10. Any warranty repairs performed via an authorised warranty claim approved by Austrack Campers must be performed by Austrack Campers, or by an authorised representative of Austrack Campers. In certain circumstances Austrack Campers may authorise repairs by other repairers on a case-by-case basis. Authorisation for these repairs will only be with the express written permission of Austrack Campers.
11. Any affiliates, representatives, associates, agents, suppliers, resellers or similar of Austrack Campers do not have the authority to authorise or deny warranty claims on behalf of Austrack Campers. Austrack Campers Head Office are the only ones who are able to authorise warranty claims.

12. Austrack Campers are not liable, (in part or whole) for any warranties, either express or implied, made by agents or resellers on behalf of Austrack Campers without the knowledge or express written permission of Austrack Campers. Any such unauthorised claims shall be the responsibility of the agent or reseller only.

Shipping Damages

Shipping damage must be filed with the carrier upon receipt of shipment. Where the shipping damage is hidden or unnoticed upon receipt of the good, Austrack Campers Head Office will require the following information as soon practicable:

1. Photos of the damaged goods; and
2. Any other relevant evidence of the shipping damage of the Austrack Campers good.

Warranty Procedures

1. All claims must be lodged by the customer, via our website using our online Warranty Claim Form.
2. All claims must be made within the relevant warranty period for that good type as set out by the terms of these Warranty Terms.
3. The customer bears the responsibility of providing adequate evidence of the failure which amounts to a warranty claim. Austrack Campers may require additional evidence to be produced by the customer in the event Austrack Campers Head Office is not satisfied upon first inspection as to the validity of the claim.
4. Third-party warranty repairs:
    a. If a customer is situated in a remote location or a location where Austrack Campers cannot fix or repair a good with a valid warranty claim under these Warranty Terms, it may authorise a third-party to carry out the repairs.

b. The customer must have written authorisation from Austrack Campers prior to the commencement of any repair work being undertaken on Austrack Campers behalf.

c. Any customer who authorises and third-party repair to an Austrack Campers product without prior written approval from Austrack Campers Head Office will bare all associated costs related to the repair and Austrack Campers will not be held liable for reimbursement to the customer or for any payment to a third-party repairer.

d. Customers who have had authorised third-party repairs will be required to submit to Austrack Campers Head Office any invoices or associated expenses to the repair prior to any reimbursement being made to the customer or 3rd party repairer.

e. Reimbursements will be paid by direct deposit to the customer or third-party repairer's nominated bank account only.

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Servicing, Warranty Care, and Service Records

Correct servicing and maintenance are essential to the safety, reliability, and warranty protection of your Austrack caravan. All servicing must be carried out to an appropriate standard, using correct procedures and parts, and by suitably qualified personnel.

This section outlines Austrack's requirements and recommendations for servicing, warranty repairs, and service record keeping to help ensure your caravan remains compliant with warranty terms and operates as intended.

Servicing Your Austrack Camper

Austrack strongly recommends that routine servicing and inspections be carried out by **AOE RV Service Centre**, as they are familiar with Austrack caravan construction, systems, and specifications.

If servicing is carried out by a third party, it **is recommended** to be completed by an approved service technician or a **qualified caravan service technician** who holds recognised and relevant qualifications for recreational vehicle service and repair.

At a minimum, a qualified service technician outside of the approved servicing network should hold:

- **MSM31022 – Certificate III in Recreational Vehicle Service and Repair**

This qualification demonstrates that the technician has received formal training in:

- Recreational vehicle service and repair procedures
- Caravan systems and component inspection
- Safe maintenance and repair practices
- Industry-recognised standards for RV servicing

In addition to the above, technicians must also hold:

- Appropriate licensing for **240 V electrical work**, where applicable
- Appropriate licensing or certification for **gas appliance servicing**, where required

Servicing performed by persons who do not hold the above qualifications or required licences may result in improper workmanship, safety risks, and warranty complications.

Warranty Repairs and Claims

Any work relating specifically to **warranty repairs or warranty claims** must be:

- Performed by **AOE RV Service Centre**, or
- Carried out by a **repairer formally authorised by Austrack Campers**

Warranty work undertaken without prior approval from Austrack Campers may:

- Delay warranty assessment
- Result in rejection of a warranty claim
- Require re-inspection or corrective work at the owner's cost

If a warranty issue arises, owners should **contact Austrack Campers or AOE RV Service Centre first** before arranging any repairs.

Importance of Service Records

Maintaining accurate service records is an important part of responsible caravan ownership and may be required to support a warranty claim.

Owners are encouraged to:

- Keep records of all scheduled servicing
- Retain invoices and service documentation
- Record dates, work performed, and servicing provider details

Service records should clearly identify:

- The work carried out
- The service provider
- The technician's business name and qualifications where available.

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Logbook Servicing

Austrack recommends the use of a **logbook system** to track servicing and maintenance.

Maintaining a service logbook:

- Provides a clear and traceable maintenance history
- Supports warranty assessments
- Helps ensure servicing is completed at the correct intervals
- Adds long-term value and transparency to the caravan's service history

Digital logbook platforms such as ***LogMate*** may be used to store servicing and maintenance records securely and access them when required.

Digital Logbook System – LogMate

Austrack supports the use of **digital logbook platforms**, such as **LogMate**, as an alternative or supplement to traditional paper service records. Digital logbook systems allow servicing and maintenance information to be recorded, stored, and accessed electronically, providing a centralised and organised service history for the camper.

When used consistently, platforms like LogMate can:

- Provide secure, time-stamped records of servicing and maintenance
- Allow owners to upload invoices, inspection reports, and supporting documentation
- Make service history easily accessible for warranty assessment or resale
- Reduce the risk of lost or incomplete paper records

Use of a digital logbook system does not replace the requirement for servicing to be carried out in accordance with Austrack recommendations. Owners remain responsible for ensuring servicing is performed at the correct intervals and by appropriately qualified service providers, regardless of how records are stored.

Maintenance Schedule Compliance

All servicing must be completed in accordance with the **Maintenance Schedule**, located **near the end of this manual**.

Failure to:

- Follow the maintenance schedule
- Use appropriately qualified service technicians
- Retain service records

may affect warranty eligibility.

IMPORTANT NOTICE

Warranty protection depends on correct servicing, appropriate qualifications, approved repair methods, and accurate record keeping. Servicing or repairs carried out by unqualified persons or without authorisation may compromise safety and warranty coverage.

If there is any uncertainty regarding the qualifications of a service provider, owners should contact **AOE RV Service Centre or Austrack Campers** for guidance **before** work is undertaken.

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Maintenance Schedule

ITEM	RECOMMENDED INTERVALS								
	3 MONTHS OR 1,000KM	2,500KM	6 MONTHS OR 5,000KM	7,500KM	12 MONTHS OR 10,000KM	12,500KM	18 MONTHS OR 15,000KM	17,500KM	24 MONTHS OR 20,000KM
BATTERY CONDITION	Test	Test	Test	Test	Test	Test	Test	Test	Test
LIGHTS	Test	Test	Test	Test	Test	Test	Test	Test	Test
SWITCHES	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect
BATTERY TERMINALS / LEADS	Inspect	Inspect	Inspect	Inspect	Inspect	Inspect	Inspect	Inspect	Inspect
WATER PUMPS / HOSES	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect/Clean	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect/Clean
GAS HOSES / OUTLETS	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect
LOCKS	Test/Inspect/Lubricate	Test/Inspect/Lubricate	Test/Inspect/Lubricate	Test/Inspect/Lubricate	Test/Inspect/Lubricate	Test/Inspect/Lubricate	Test/Inspect/Lubricate	Test/Inspect/Lubricate	Test/Inspect/Lubricate
HINGES	Test/Inspect/Lubricate	Test/Inspect	Test/Inspect/Lubricate	Test/Inspect	Test/Inspect/Lubricate	Test/Inspect	Test/Inspect/Lubricate	Test/Inspect	Test/Inspect/Lubricate
SEALS	Inspect/Clean	Inspect/Clean	Inspect/Clean	Inspect/Clean	Inspect/Clean	Inspect/Clean	Inspect/Clean	Inspect/Clean	Inspect/Clean
BRAKE CABLE	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust/Lubricate	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust/Lubricate
BRAKE LININGS	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust/Clean	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust/Clean
CHASSIS LUBE	Inspect	Inspect	Inspect	Inspect	Inspect/Lubricate	Inspect	Inspect	Inspect	Inspect/Lubricate
HITCH	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect/Lubricate	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect/Lubricate
JOCKEY WHEEL	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect
STABILISER LEGS	Test/Inspect	Test/Inspect	Test/Inspect/Lubricate	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect/Lubricate	Test/Inspect	Test/Inspect
WINCHES	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect/Clean	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect/Clean
SUSPENSION BUSHES	Inspect	Inspect	Inspect	Inspect	Inspect/Lubricate	Inspect	Inspect	Inspect	Inspect/Lubricate
WHEEL ALIGNMENT	Inspect/Adjust	Inspect	Inspect	Inspect	Inspect/Adjust	Inspect	Inspect	Inspect	Inspect/Adjust
WHEEL BEARINGS	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust	Inspect/Adjust
WHEEL NUTS	Inspect/Adjust	Inspect	Inspect/Adjust	Inspect	Inspect/Adjust	Inspect	Inspect/Adjust	Inspect	Inspect/Adjust
TYRES	Inspect	Inspect	Inspect	Inspect	Inspect	Inspect	Inspect	Inspect	Inspect
TYRE PRESSURE	Adjust	Adjust	Adjust	Adjust	Adjust	Adjust	Adjust	Adjust	Adjust
GAS STRUTS	Test/Inspect/Lubricate	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect/Lubricate	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect/Lubricate
SHOCK ABSORBERS	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect	Test/Inspect
FRIDGE FAN FILTERS	Inspect/Clean	Inspect/Clean	Inspect/Clean	Inspect/Clean	Inspect/Clean	Inspect/Clean	Inspect/Clean	Inspect/Clean	Inspect/Clean
WATER TANKS	Test/Inspect/Clean	Test/Inspect/Clean	Test/Inspect/Clean	Test/Inspect/Clean	Test/Inspect/Clean	Test/Inspect/Clean	Test/Inspect/Clean	Test/Inspect/Clean	Test/Inspect/Clean

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