

MDC
XT14E MKIII
OFFROAD CARAVAN

OWNER'S MANUAL
EDITION: 2024 MKIII



www.marketdirect.com.au



Phone: 1300 494 494

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DISCLAIMER: This manual is provided in good faith and MDC Group PTY LTD may amend or update this owner manual from time to time.

Use of Product

The intent and purpose of this manual is to assist owners in the correct use and operation of the product and outline the servicing schedule to be followed, ensuring the correct maintenance of the product.

Servicing

Servicing information contained in this owner manual is provided for those who have appropriate technical skills and relevant to the subject matter the publication deals with in regard to maintenance and repairs.

The servicing content of this manual assumes a satisfactory technical knowledge and mechanical skills and experience. It is not suitable for people who are not trained or qualified in the subject matter it deals with. If you do not have the appropriate skills and experience, or if you do not have access to appropriate tools and equipment, you may injure yourself or others around you and/or you may cause damage to the Caravan or caravan you are working on, including making it unsafe. Users of this owner manual must:

- Read all content thoroughly. It is especially important to have a good understanding of all the contents shown in the INTRODUCTION and SAFETY Sections of this publication.
- Use only the correct tools and equipment for all repairs and servicing.
- If part replacement is necessary, replace the part with the same part number or equivalent part. DO NOT replace it with a part of inferior quality.
- Observe all 'Cautions' and 'Notices' to reduce the risk of personal injury during service or repair, or improper service or repair that may damage the Caravan/caravan or render it unsafe.
- Understand that the 'Cautions' and 'Notices' in this publication are not exhaustive because it is impossible to warn of all possible hazardous consequences that might result from failure to follow the instructions in this publication. You must carry out your own risk assessments as you work.

MDC Group PTY LTD does not accept any and all liability which may arise because a user of this publication fails to follow directions in the publication or safe work methods associated with use and maintenance of the product.

Those without the required skills, knowledge, tools, and experience to work on and maintain this product should seek the services of a suitably qualified person or business. This publication is based on the latest product information at the time of release. However, specifications and procedures are subject to change without notice.



My XT14E Hybrid Caravan

NAME:

ADDRESS 1:

ADDRESS 2:

MODEL:

VIN:

BUILD DATE:

TARE WEIGHT:

ATM:

TYRE SIZE:

DEALER:

DISCLAIMER: by receiving this handbook, you confirm there you have read and agree to all the terms and conditions and understood the use and maintenance care of MDC®



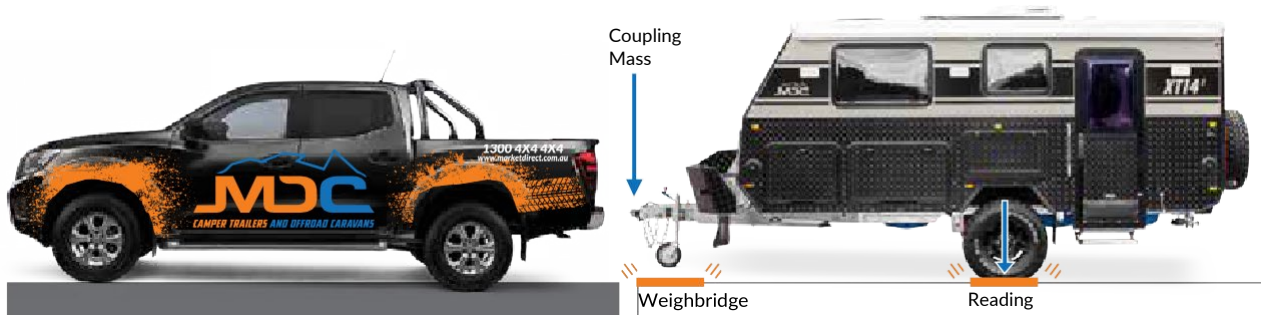
Introduction

WELCOME TO MDC

Off road caravanning is a rewarding way to travel and see our great country. Owning an MDC Caravan will afford you the opportunity to travel to remote places and stay in comfort. It is the intention of MDC for you to have the best possible owner experience and enjoy the great outdoors.

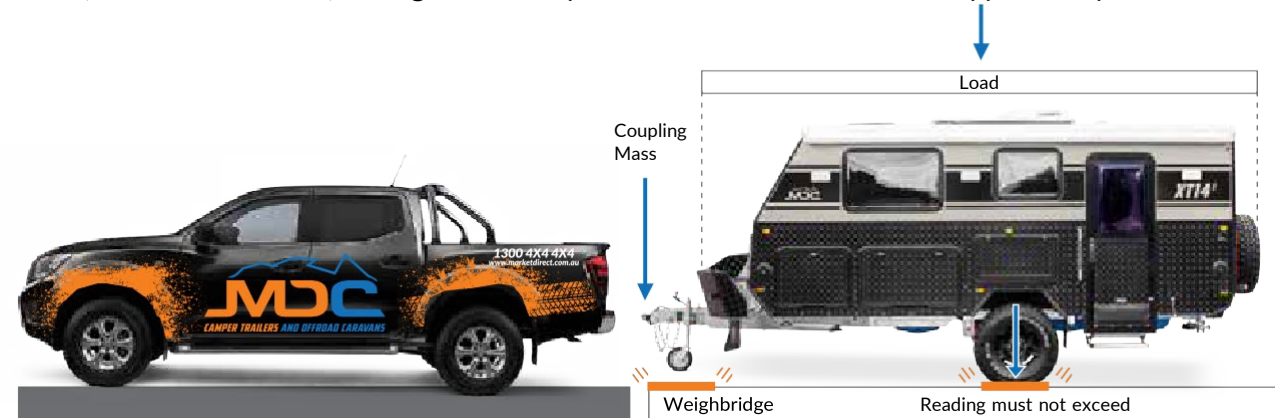
Terminology & Abbreviations

Tare Weight: The total weight of the trailer (load on tyres plus coupling load) with all options and fittings as supplied by the manufacturer, with empty water tanks, excluding fluids not essential for operation on public roads, and without luggage or personal effects.



ATM (Aggregate Trailer Mass) Rating: The total permissible mass of the Trailer. This includes the coupling mass and whatever you add as payload (e.g. water, gas, luggage) up to the specified rating. The ATM Rating must not be exceeded.

GTM (Gross Trailer Mass) Rating: The total permissible mass that can be supported by the wheels/



tyres of the Trailer. This includes whatever you add as payload (e.g. water, gas, equipment and luggage), but does not include the mass supported by the tow vehicle. The GTM Rating must not be exceeded.



Caravans for illustration purposes only.



Terminology & Abbreviations

Ball Weight: The downward load exerted on the tow point of the vehicle by the trailer.

GCM: (Gross Combination Mass): This is the total allowable combined mass of tow vehicle and trailer as determined by the tow vehicle manufacturer.

Camber: Camber angle is the measure in degrees of the difference between the wheel's vertical alignment perpendicular to the surface. If a wheel is perfectly perpendicular to the surface, its camber would be 0 degrees. Camber is described as negative when the top of the tyre begins to tilt inward towards the chassis rail.

Toe In/out: Negative toe, or toe out, is the front of the wheel pointing away from the centerline of the vehicle. Positive toe, or toe in, is the front of the wheel pointing towards the centerline of the vehicle.

Toe can be measured in linear units, at the front or rear of the tyre, or as an angular deflection. In the case of

MDC products, the "toe in" is measured in millimeters at the front of the tyre from the chassis rail.

Tow vehicle and Trailer Compatibility

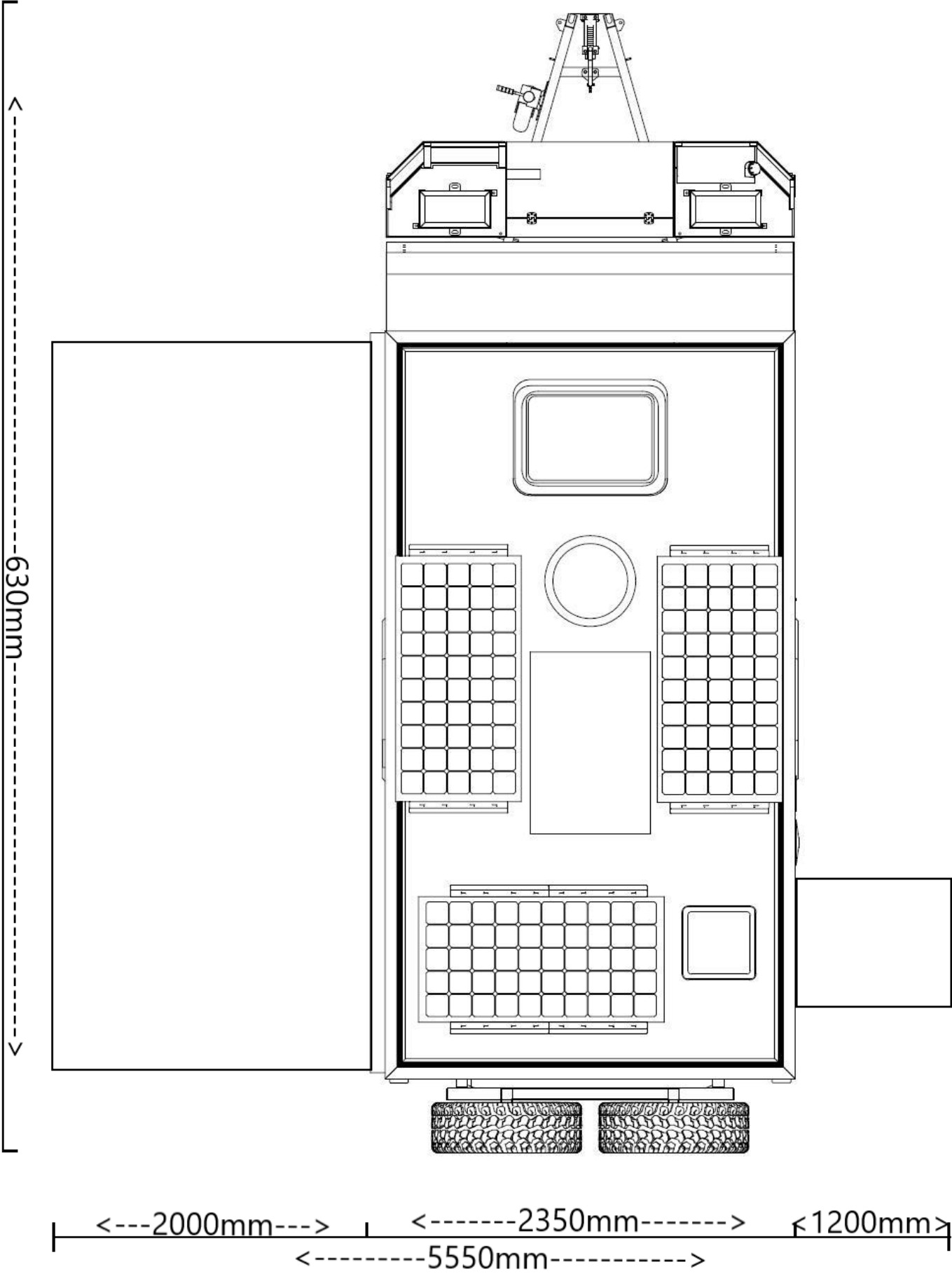
Your tow vehicle manufacturer has applied a maximum towing capacity to the vehicle which is the Aggregate Trailer Mass (ATM) and a maximum Gross Combination Mass (GCM). These specifications **MUST NOT** be exceeded. It is your responsibility to know, understand and follow these specifications. Vehicle manufacturers may also specify or recommend "Weight Distribution Bars" when towing under certain conditions. You **MUST** ensure this is compatible with the vehicle and trailer combination.



DANGER

DANGER – Exceeding manufacturer weight and combination limits can result in loss of control leading to death or serious injury. Your tow vehicle and hitch must be rated for the Gross Vehicle Weight of the trailer.

Dimensions



Store Locations

QUEENSLAND	
Brisbane 3/711 Beaudesert Rd Rocklea QLD 4107	Caboolture 4 Boeing Place Caboolture QLD 4510
NEW SOUTH WALES	
Sydney 111 Newbridge Rd Chipping Norton NSW 2166	Newcastle Unit 1, 2364 Pacific Hwy Heatherbrae NSW 2324
VICTORIA	
Melbourne 3/124 Canterbury Rd Kilsyth South VIC 3137	Campbellfield 1551 Sydney Rd Campbellfield VIC 3061
WESTERN AUSTRALIA	
Perth 238 Great Eastern Hwy Ascot WA 6104	
SOUTH AUSTRALIA	
Adelaide Units 2,3 & 4/32-50 Weaver St Edwardstown SA 5042	

Contact Details

NATIONAL TOLL FREE
1300 494 494

Safety Information

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 the product. 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.

Manual content does not imply, express or other any warranty, the owner should read the limited warranty terms included in this booklet.

MDC does not cover damage due to unauthorised modifications, misuse, abuse, incorrect assembly, improper and irregular maintenance or accident or collision.

Before using this product, you should be certain your tow vehicle is suitably rated and equipped to tow the product safely and legally. The trailer and vehicle pairing must be within the safe “**Maximum Towing Capacity**”, “**Ball Weight Capacity**” and “**Gross Combination Mass**” as stated by the vehicle manufacturer.

This caravan is fitted with electric brakes and a “**Breakaway System**”. Requirements for breakaway systems can vary from state to state. It is mandatory to supply a maintenance charge to the breakaway battery source while driving. You **MUST** ensure this capability is fitted to your vehicle. The maintenance charge is supplied to the caravan via the Anderson plug on the drawbar.

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

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 industry optimum ball weight on a caravan is between 9 and 11% of the total Caravan weight. MDC Caravans fit into this category and 10% should be used as the starting point.

Modifications to The Product

Gas Systems

The installed gas system on this product is an approved and certified installation. Any changes, modifications or adjustment may render the system non-compliant and dangerous. Market Direct Group Pty Ltd does not condone, recommend, or otherwise consent to any modifications, adjustment, addition or tampering in any way with the installed gas system on any and all products.

Chassis

All MDC chassis are fully engineered and verified using Finite Element Analysis (FEA) software. This ensures that the chassis for each model passes the relevant regulations and design rules as originally provided to the customer. Any modification to the chassis or drawbar whatsoever (no matter how minor) will inevitably change this – whether it impacts the towing dynamics, expected loads and stress points, safety chain attachment points, overall trailer length etc.

Market Direct Group Pty Ltd does not condone, recommend, or otherwise consent to any modifications, adjustment, addition or tampering in any way with the drawbar, safety chains or safety chain attachment points.

Fire



CAUTION

Ventilation

So not obstruct any permanent ventilation in this camper/caravan including annex attachments.

Precautions

Do not leave children or pets alone in the camper/caravan.

Combustible Materials

Keep all combustible materials away from:

- Ovens and cooktops
- Hot water heater
- Diesel heater and outlet

Fire Extinguisher

Ensure fire extinguisher is free of obstruction and in operable condition.

Ensure you are familiar with its location and operation.

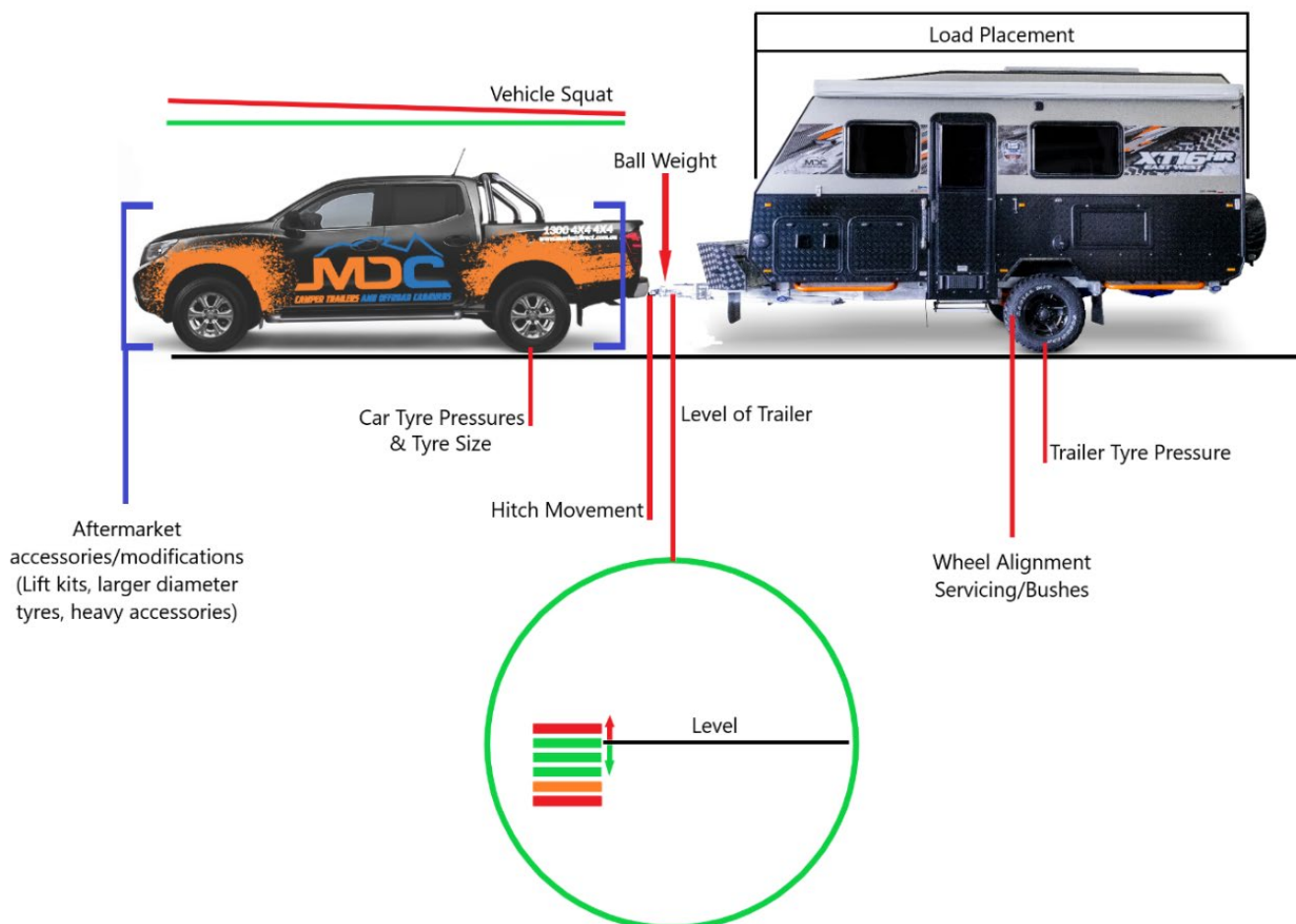
In Case of Fire

- Evacuate everyone from the trailer and clear the immediate area
- Turn off gas valve at the gas cylinder
- Disconnect mains power supply
- Call fire brigade on 000
- Only try and extinguish the fire if safe to do so

Towing Safety

Achieving a Safe Towing Combination

Ensuring a camper or caravan is safe and easy to tow is generally an easy thing to achieve, this does not mean it's always the case and sometimes, a vehicle and trailer combination may need some tweaking to make it ideal. There are several aspects that need to be correct in order to maximise towing safety and handling. It is important to use this information in conjunction with the maximum weight limits applied by your tow vehicle's manufacturer as well as ensuring you stay within the maximum specified ratings of your caravan or camper. These can be found in the vehicle's owner manual. This summary will address the main aspects, these aspects include, but may not be limited to the items listed in the following diagram:



Trailer Tyre Pressures

Tyre pressures have a large effect on the handling and performance of any vehicle, be it a towed vehicle or motorized. The tyre pressure on your camper or caravan will indeed be a major contribution to how well it tows and resists instability. Due to how much a camper or caravan may vary in weight depending on the cargo (as much as 1600kg to 3000kg in the MDC range) it is important to have your tyres at the pressure recommended by the trailer manufacturer, for the actual weight of the trailer when loaded. You should follow the tyre pressure guide in this manual for on road/highway tyre pressures.

Tow Vehicle Tyre Pressures

Equally as important as trailer tyre pressure is the tyre pressures in your tow vehicle. The added weight of the trailer ball weight should be factored into calculating the tyre pressures in the rear of the car. What should also be factored in is the effect the distance of the hitch from the axles plays in leverage. A load on the tow bar of 250kg may well have the effect of 300kg or more on the vehicles rear tyres meaning additional pressure must be applied. This will limit sidewall flex and sideways movement of the rear of the vehicle, limiting unwanted movement that can cause instability in the trailer.

Ball (Coupling) Weight

The ratio of overall weight of the trailer to the weight exhibited on the tow ball or coupling is an extremely important aspect of making a trailer handle correctly when towed. Generally, the ball or tongue weight allowed by most vehicle manufacturers is 10% of the maximum towing capacity. Given this ratio, the caravan industry builds campers and caravans with this in mind. When loading your MDC caravan, you should have a target ball or coupling weight of 10% or slightly higher to ensure the weight balance is at an ideal starting point. This figure should not be a guess, you should weigh your caravan with its normal load when travelling and use a ball weight scale to achieve the desired ball weight. These are an inexpensive item that will help you get the weight balance right when you load up for your trip.

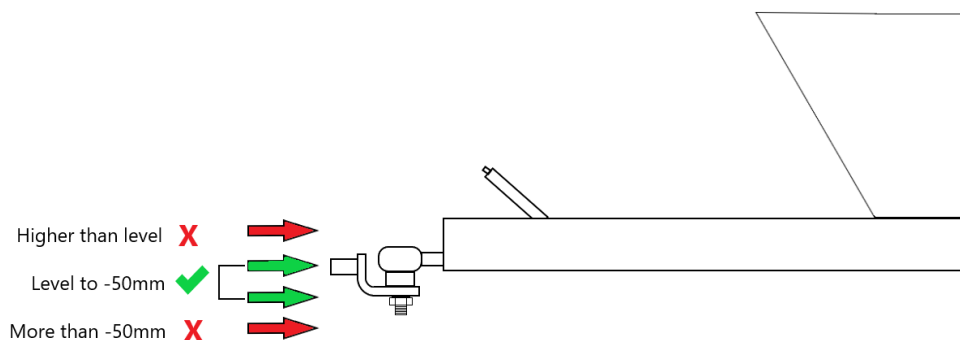


Load Placement

Where you place the items in your trailer will affect how it behaves. Loading too much weight in the extremities of the trailer can have a very bad effect. MDC owner manuals have a loading guide to assist in this area. By following the guide and ball weight recommendations you'll achieve the best possible result. Use the load placement guide in this manual as a reference for packing your caravan.

Trailer Level

The height of your hitch in respect to the level of the trailer will change the handling while being towed. The best practice with your MDC trailer is when loaded and hitched to the vehicle, the drawbar is NO higher than level. Ideally you should look to have the drawbar slightly lower than level between 0 and 50mm. Higher than level or too low will have an adverse effect on how the trailer tows.



Hitch Movement

Most modern tow bars have an adjustable screw fitted to the hitch receiver that can be used to stop the hitch insert from rattling. Unfortunately, this is not a sure fire way to limit sideways movement that can affect how well your trailer tows. Hitch movement from side to side can cause sway and when combined with a tow vehicle that has a greater distance between the rear axle centre and the hitch point, this affect can cause serious sway issues. Combine this with poor tyre pressures on the tow vehicle and you have a recipe for disaster.

If there is excess play in the hitch and hitch receiver, you may need to place shims either side of the insert to limit the movement. Shims are commercially available such as the pack below.



Vehicle Squat

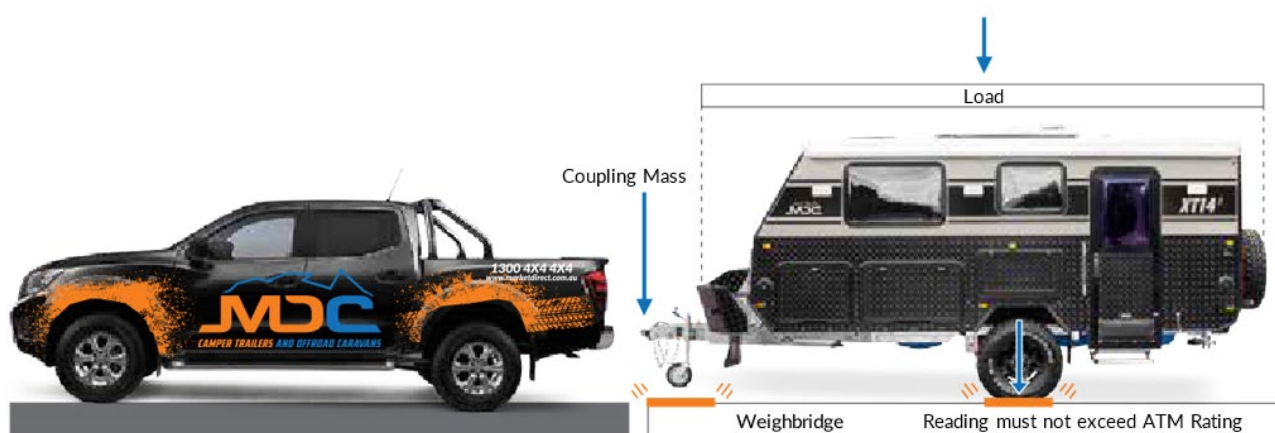
When the back of a vehicle squats due to cargo and/or ball weight of the trailer, the handling of the tow vehicle can be changed to its detriment. Vagueness in steering, poor toe, camber, and caster settings due to reduced front suspension load, reduced brake and tyre grip are often the result. All this in turn can result in a poorly handling towing combination. The best way to rectify this is upgrading the tow vehicle suspension to be suitable for the weights being experienced. Some vehicle manufacturers recommend Weight Distribution Hitches (WDH), this will be outlined in the vehicle owner manual and should be considered. You should also consult with the trailer manufacturer if this is an appropriate fitment to the trailer. The WDH should NOT be used in off road operation as it will NOT meet the required articulation that will be experienced. To better setup your tow vehicle suspension, it's best to consult a suspension expert experienced with towing requirements.

Maximum Weight Limits

The following is an outline of the ratings that will be specified by the manufacturer of your vehicle and the camper/caravan manufacturer. These MUST be followed in conjunction with previously mentioned criteria for safe handling. None of the maximum ratings may be exceeded.

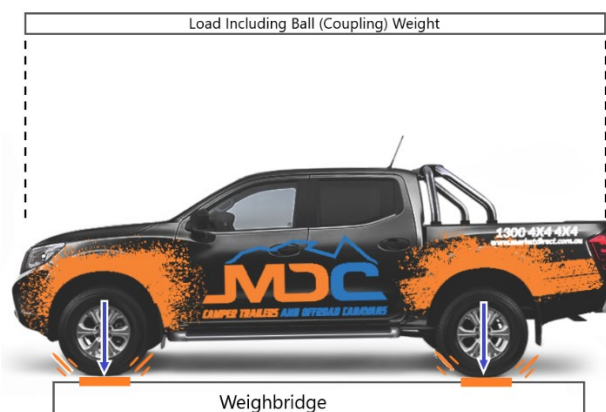
ATM (Aggregate Trailer Mass)

This limit is specified by the trailer manufacturer and must NOT be exceeded under any circumstances. The ATM is the full weight of the loaded trailer including ball (coupling) mass.



Vehicle GVM (Gross Vehicle Mass)

This is the loaded weight including fuel, passengers, cargo and ball (coupling) mass of the attached trailer on the tow vehicle.

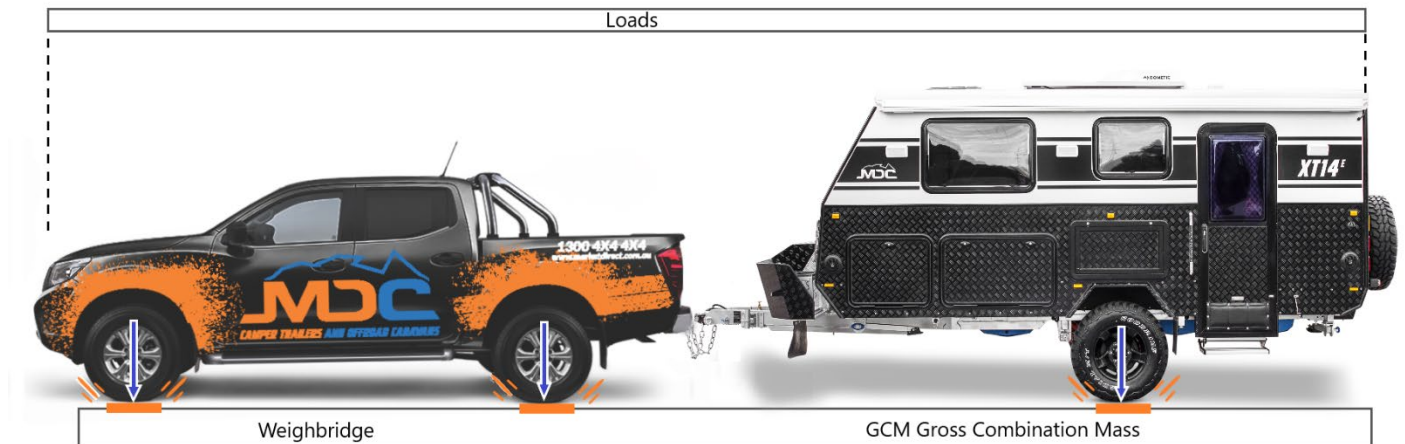


Axle Load

This is the maximum load on an axle specified by the tow vehicle manufacturer. It is possible to have your vehicle and trailer within ATM, GVM and GCM load limits but above the axle load limit specified. Be sure that this is not exceeded.

GCM (Gross Combination Mass)

GCM is the maximum combined load of the tow vehicle and trailer, as specified by the tow vehicle manufacturer. Never exceed this maximum weight limit.



Summary

The above will assist in tuning or trouble shooting handling problems with your towing combination but are not the sole influences. Other items for consideration are:

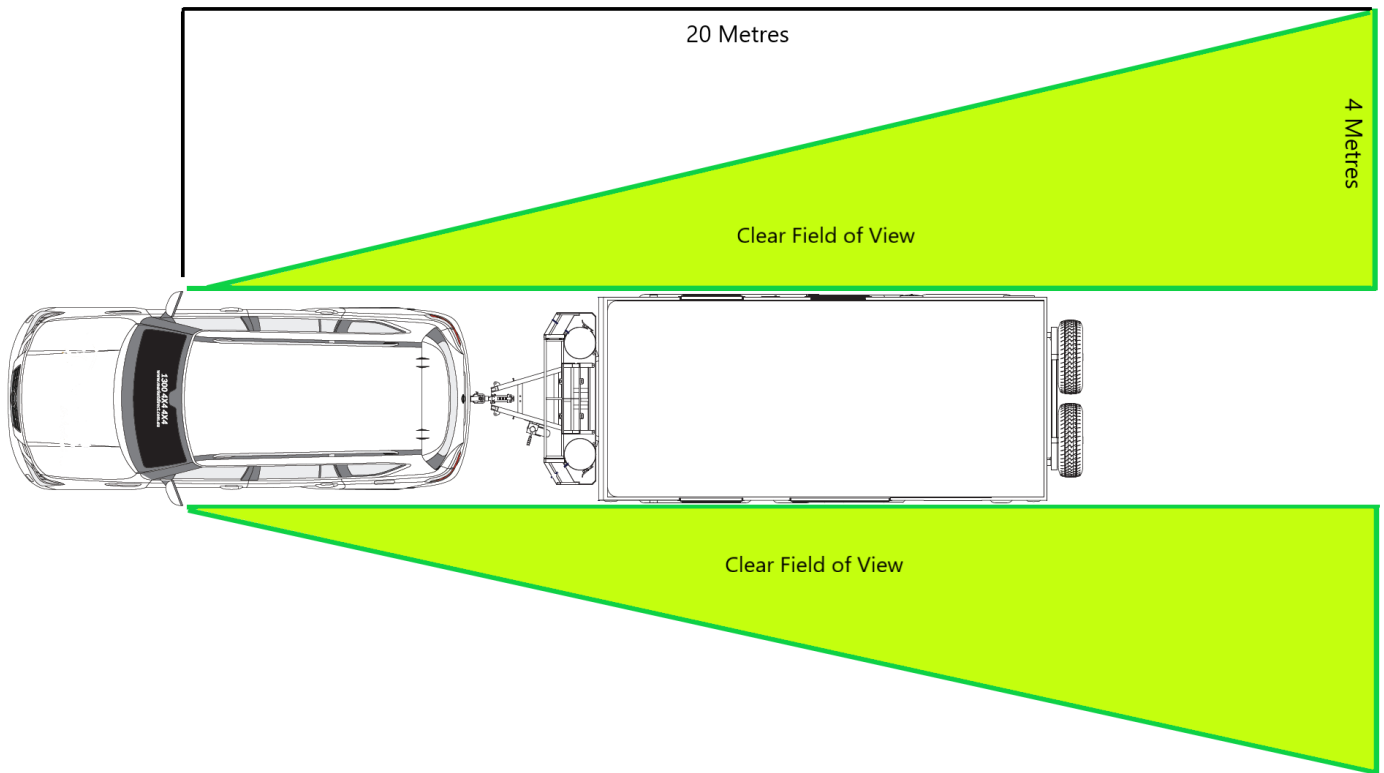
- Wheel alignment on both vehicle and trailer.
- Wear and tear on:
 - Suspension bushes
 - Shock absorbers
 - Springs
 - Tyres
- Tow vehicle tyre size (Oversize tyres)
- Extended hitches
- Distance between axle centre and hitch point
- Tow vehicle accessories (Weight distribution)
- Real life tow vehicle capability (Not all vehicles are created equal)

The purpose of this information is to help you to do a self-assessment and achieve a sound towing combination. If you are not confident you can achieve this, you should consult an expert to assist.

If you require assistance from MDC, call 1300 494494 option 3 and speak to our customer service department.

Towing Mirrors

Depending on the width of your car mirrors versus the overall width of your camper or caravan, you may be required to fit extended mirrors to your vehicle when towing. The illustration below shows the minimum required field of vision through your vehicle's mirrors.



Note: Mirror extension attachments must be removed when not towing, fitted mirrors that extend must also be retracted when now towing.

Jacking Your Caravan or Camper

Your trailer is fitted with purpose built jacking points and from January 2021 supplied with a suitable jack. An appropriately rated bottle jack is an acceptable alternative, however when using the jacking point beneath the trailing arm ensure the jack is of a retracted height that will fit under the jacking point when the tyre is deflated. A suitably rated "High Lift" jack may be used on the jacking points on the side of the body behind the wheels provided it has the correct positive engagement fitting to match the trailer. To ensure safe usage the following must be followed:

- The jack is to be used on level firm ground wherever possible.
- The wheels of the trailer should be chocked, and no person should remain inside the trailer whilst it is being jacked.
- No person should place any portion of their body under a trailer that is supported by a jack.
- The trailer should be attached to the towing vehicle whilst being jacked.
- When performing maintenance ensure suitably rated jack stands are used – do not rely on the trailer being supported by the jack.

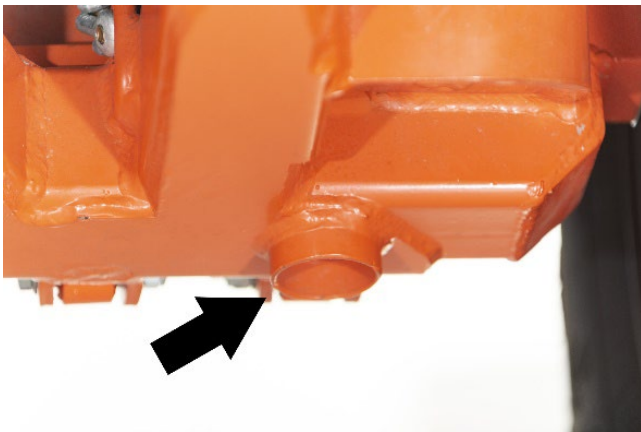
Behind the wheels



Under the chassis



Under the trailing arm



Electrical Safety



Warning

Failure To Follow These Instructions May Result in Death or Serious Injury!

- ⚠ When working with electrical equipment or lithium batteries, have someone nearby in case of an emergency.
- ⚠ Study and follow all the manufacturer's specific precautions when using and servicing the battery and connected appliances.
- ⚠ Wear eye protection and gloves.
- ⚠ Keep unit away from moist or damp areas.
- ⚠ Avoid dropping any metal tool or object on the battery. Doing so could create a spark or short circuit which goes through the battery or another electrical tool that may create an explosion.



Warning

Shock Hazard! Keep Away from Children

- ⚠ Avoid moisture. Never expose unit to snow, water, etc.
- ⚠ Inverter Unit provides 230 VAC, treat the AC output socket the same as regular wall AC sockets at home.
- ⚠ Read and understand the information in the appliance manuals before operating this equipment

The 240v electrical system in your caravan has been certified by a trade qualified person. Under no circumstances

should an unqualified person interfere with, modify, or repair this system. An RCD safety device is fitted to this caravan for your safety.

- Always use a 15amp lead to connect to mains power.
- Do not modify the earth pin to accommodate a lesser lead.
- When connecting to 10amp mains, always use an approved adapter.
- Never coil power leads when in use. Lay the lead out in lengths in a safe manner that prevents creating a trip hazard.

Vehicle Electrical Requirements

Brake Controller

All MDC campers and caravans require an electric brake controller to be fitted to the tow vehicle by law. There is a wide range of controllers available that are suitable.



Correct Vehicle Wiring for MDC Caravans

To comply with national laws on breakaway systems, you must supply a maintenance charge to the battery/batteries that power the system should it be activated. In all MDC products, the breakaway is powered by the house batteries in the caravan. For this purpose an Anderson plug connection is fitted to all MDC caravans on the drawbar. Your vehicle will need to be fitted with a power supply to a 50 amp Anderson plug near the towbar so the trailer can be connected. The vehicle only needs to supply power while it is running so a voltage sensitive relay or switching device may be used to protect the start battery when the car engine is stopped.



Trailer Lights

Plug Type – 12 Pin Flat (Not Negotiable)

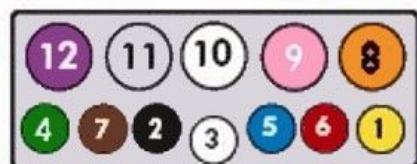
Charging Camper/Caravan While Driving

Plug Type – 50-amp Anderson Plug.

Vehicle with or without smart alternator:

The Anderson plug can be connected to the start battery on the vehicle and should include the following to protect the start battery.

1. 50-amp relay to stop power supply when vehicle is not running.
2. 50-amp fuse or circuit breaker at the battery



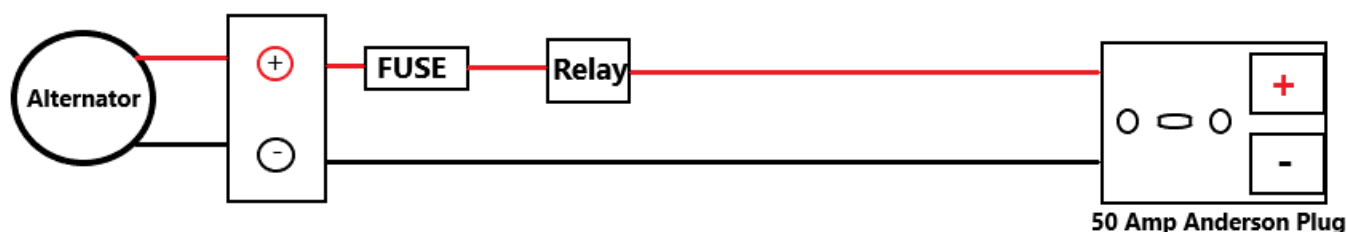
12 Pin Flat Socket

1. Left Indicator
2. Reverse lights
3. Earth
4. Right Indicator
5. Electric Brakes
6. Stop Lights
7. Taillights, clearance lights, side lights
8. N/A
9. N/A
10. N/A
11. N/A
12. Accessory power for DC to DC trigger wire

Ensure Pins Have
Even Gaps



Notes: The Projecta IDC25X DC to DC controller fitted in your MDC trailer is programmed to favour the solar panel input exclusively until it drops below a threshold voltage input. By providing accessory power to the number 12 pin, the trigger for the IDC25X will be set off to take power from both the Anderson plug and the solar panels. It will also trigger the IDC25X to activate the vehicle's ECU to make the alternator provide power to fully charge the multiple batteries in your Caravan.



Trail-Assure Electronic Stability Control System

— *Locked to the Road* —



FITTED WITH

TRAIL-ASSURE™

ASYMMETRIC SWAY CONTROL

AUS PAT.NO.2014204434 | US PAT.NO.9,026,311

As an added safety feature, your caravan is fitted with a Trail-Assure BG-5000 electronic stability control system. This is an asymmetric braking system that uses onboard measuring instruments to determine which wheel brakes to apply, and how often, to increase the stability of your caravan while driving. The BG-5000 has been factory fitted precisely with the controller module mounted in the front underneath section of your caravan so that it can make reliable and precise measurements during a trip. It also features a factory pre-set algorithm to sense off-road conditions and automatically disables the stability braking to avoid nuisance brake applications in off-road conditions, minimizing unnecessary brake wear. The system will automatically re-engage once you are back on the road.



There is a status light indicator used to determine the functionality and modes of the unit. It is located on the drawbar for ease of access.

When inactive the system will enter sleep mode to conserve power. To wake the system and check operation, connect the tow plug to your vehicle and turn on your vehicle.

After a moment, the status light indicator will light up solid green to indicate normal operation.



The BG-5000 is self-diagnosing and in the unlikely event that you need to troubleshoot your unit, identify this module, and determine the series of lights displayed. Refer to the below table to identify the status of the unit.

LIGHT ACTION	CONDITION	CORRECTIVE ACTION
Solid GREEN pulsing	Normal operation - no system faults	No action - system OK
GREEN flash 2 times per second	Sway control braking is active	No action - system OK
1 GREEN flash every 2 seconds	Firmware checksum error. Keep The trailer sits still for a minimum of 60seconds, then drive normally.	If the module does not return to normal solid GREEN pulsing light, have the unit checked at a service centre.
1 GREEN flash every 4 seconds	Module reset to mfg. default values. Keep the trailer sitting still for a minimum of 60 seconds, then drive normally.	If the module does not return to normal solid GREEN pulsing light after 3 system restarts, have the unit checked at a service centre.
RED, GREEN, RED, GREEN, continuing...	Sway control automatically disabled due to rough terrain	The unit will return to normal green light when not on rough terrain
No light	Unit in "sleep" mode	Activate manual override on the brake controller to "wake up" unit
	No power after "wake up" from brake controller	Verify the unit has good quality power, ground, and brake controller wire connections. Check for any blown fuses on the truck and trailer.
	Overvoltage - over +20 volts	Check that the power source is not exceeding 20 volts – correct voltage to 12-15 volts
	Low voltage - under 3 volts	Check that the power source is 12-15 volts. Verify good power and ground connections
5 RED flashes	Ground wire intermittent or disconnected	Check ground wire connections to the trailer battery and tow vehicle
4 RED flashes	Brake short (right side)	Correct the short on the right-side brake wiring
3 RED flashes	Brake short (left side)	Correct the short on the left side brake wiring
2 RED flashes	Sensor malfunction - no sway control	Service centre repair required
1 RED flash	Blue Wire Short – System malfunction	Correct the blue wire short, Service centre repair may be required.
Fast RED flashing	Low voltage - between 3 to 6 volts	Check the power and ground connections

For more information on how the system works, wiring information and support, please refer to the Trail-Assure BG-5000 user manual provided.

The control module has been strenuously evaluated against the various amount of integrated and aftermarket trailer brake controllers in use today. Compatible controllers include but are not limited to:

Integrated Vehicle Brake Controllers
Fiat/Chrysler: 2014, 2015, 2016, 2017 Dodge RAM 2500
Ford Motor Company: 2013 F-150
Ford Motor Company: 2017 F-250
General Motors: 2016 Chevy Tahoe
Toyota: 2017, 2018 Tundra

Aftermarket in-vehicle Brake Controllers
Redarc
Tekonsha
Curt
Draw-Tite
Hayes
Hopkins
DirecLink

If for any reason you become aware of a compatibility issue with a particular trailer brake controller, please refer to the provided manual for contact details.

Disclaimer: Electronic stability control systems are NOT substitutes for safe driving or towing practices. In no event shall MDC be liable for loss or damage caused by misuse, modifications, or unsafe driving/towing practices.

Gas & Appliance Safety

Gas Certification

Your Caravan has been supplied gas tested and certified. Any additions or alterations to the gas system must be performed by an authorised person and will require re-certification and testing. Also note any alterations may affect your warranty on both the system and appliances.

General Safety

- Your Caravan may have several gas safety labels affixed throughout containing important information. All instructions are to be followed and the labels shall not be removed for any reason.
- Make sure to close appliance valves before opening the cylinder valves.
- Where readily accessible, check connections at the appliances, regulator, hoses and cylinders periodically for leaks with soapy water (or an equivalent) – this should be done every time a cylinder is changed or at least annually.

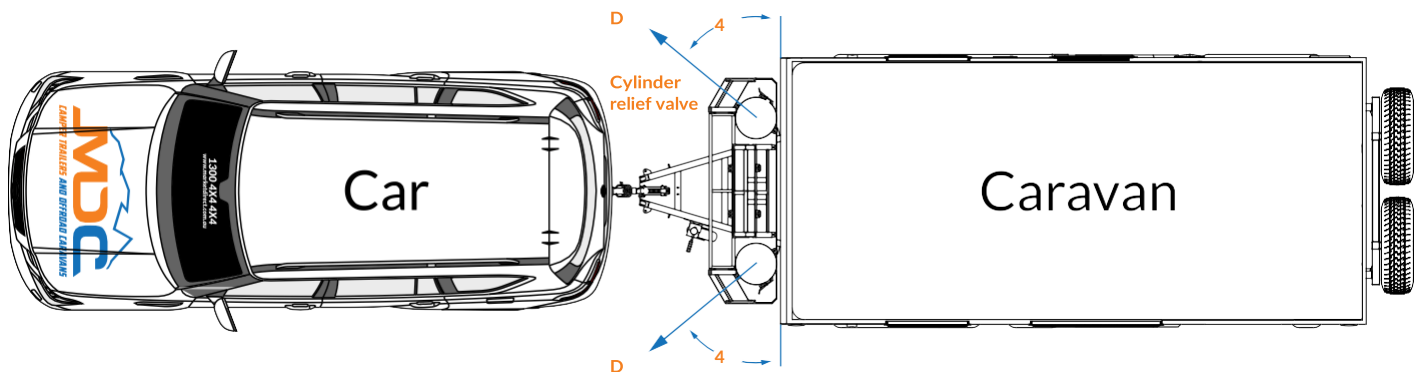


CAUTION – the ammonia present in some soaps and detergents can react with brass fittings and cause such fittings to crack after a short period of time. Therefore, caution should be exercised when using soap solutions on brass fittings and all connections should be rinsed thoroughly with fresh water as soon as possible after the application of the soap solution.

- Never use a match or flame when checking leaks.
- Never use cooking appliances for comfort heating.
- In the event of a fire, immediately close cylinder valve if safe to do so.
- Appliances must not be altered without the authorisation of the manufacturer.
- In the event of an accidental gas leak, close cylinder valve and ventilate the area using a safe method until the air is clear.
- Flexible hoses are used between the LP Gas Cylinder and regulator as well as between your slide-out kitchen cooker (if fitted) and the gas bayonet. These flexible hoses are easily accessible and shall be inspected regularly by a competent person.

Gas Cylinder Safety

- LP Gas cylinders have a 10-year lifespan between inspection and re-certification. Always use gas cylinders that **are within their compliance date.**
- For drawbar mounted cylinders (if applicable), orient the cylinder relief valves of both cylinders discharge away from both the trailer and towing vehicle as shown.
- For gas cylinders stored in a dedicated LP Gas Locker ensure the locker is kept closed at all times unless changing or operating the cylinders.
- Close cylinder valves when appliances are not in use or while refueling is in progress.
- Ensure cylinder valves are closed to prevent the unintended release of gas from a cylinder.



Gas Appliance Safety

- Gas appliances are certified and have a flame safeguard feature to stop gas flow in the event of the flame going out. Never interfere with this function or replace appliances with a non-certified type.
- Slide-out kitchens with cookers should only be operated with an annex fully erected. Failing to do so may affect the safety and operation of the gas appliance.
- Slide-out kitchens with cookers must only be used with a flexible connecting hose that is disconnected from the gas bayonet fitting when in its stored position. Under no circumstances permanently connect this appliance.
- Only approved and suitable gas appliances with flame safeguard systems shall be connected to the gas bayonet (if fitted).

Removing the Flue Cover

Caution! To use your inbuilt Truma hot water system, the external flue covers must be removed prior to starting the unit.

NOTE: Late 2022 models will not be fitted with the lockable cover, this is in preparation for proposed changes in regulations. This is only applicable to those models and not retrospective.

First, open the flue dust cover shown.



Remove plastic cover



Ready for use

CAUTION

To use your inbuilt Truma hot water system, the external flue covers must be removed prior to starting the unit.

Ventilation and Flues

Check all permanent ventilators, flues (if applicable) and vents to ensure they are clear, open and unrestricted.

Any supplied or 3rd party vent cover(s) (e.g., low level door vent) should only be used for covering the vents during storage between use with all LP gas system valves closed. All vents (e.g., low level door vent) shall be always uncovered when the Caravan is in use.

Isolating Appliances

Internal gas appliances have an isolation valve fitted in the gas line. During travel these should be turned to the off position where practical and always turn the valve on the active gas bottle off when towing or refueling.

Diesel Heater Safety

Important information before operating the diesel heater.

The diesel heater is designed for use in your caravan.

The heater is designed to heat the main living area of your caravan. Attempting to warm the additional annex area may be beyond the performance of the diesel heater unit.

The diesel heater is not to be used for the following.

Directing air onto people or animals

Long term use in large areas

Drying clothes and other items



CAUTION

Never pack items around the diesel heater unit. Always ensure all items are clear of the heater unit and all hoses and exhaust.

Ensure intake and output vents are always clear and free of obstruction.

Always allow the heater unit to cool under ventilation mode before turning off unit.

Never use the diesel heater in a confined area e.g., Garage, shed, workshop, non-ventilated area

Consider the comfort of nearby caravans and the effect of exhaust fumes.



DANGER

Risks of injury and burns.

The motor unit and exhaust operate at high temperatures. Do not attempt to work on the unit while hot

Do not allow children to operate the heater.

**** Allow the heater to fully cool, turn off power before refueling.

Do not smoke near diesel fuel tank.

Do not modify the diesel heater unit in any way.

Do not inhale exhaust fumes.

The heater exhaust is very hot. Do not use the diesel heater where contact with long grass and vegetation is possible. Always use in a cleared area.

Never use the heater while the trailer is in motion.

Using the Caravan

Weights and Payload Capacities

The information plate attached to the drawbar of your caravan displays the relevant weights and weight capacities of the van.

Loading Your Caravan

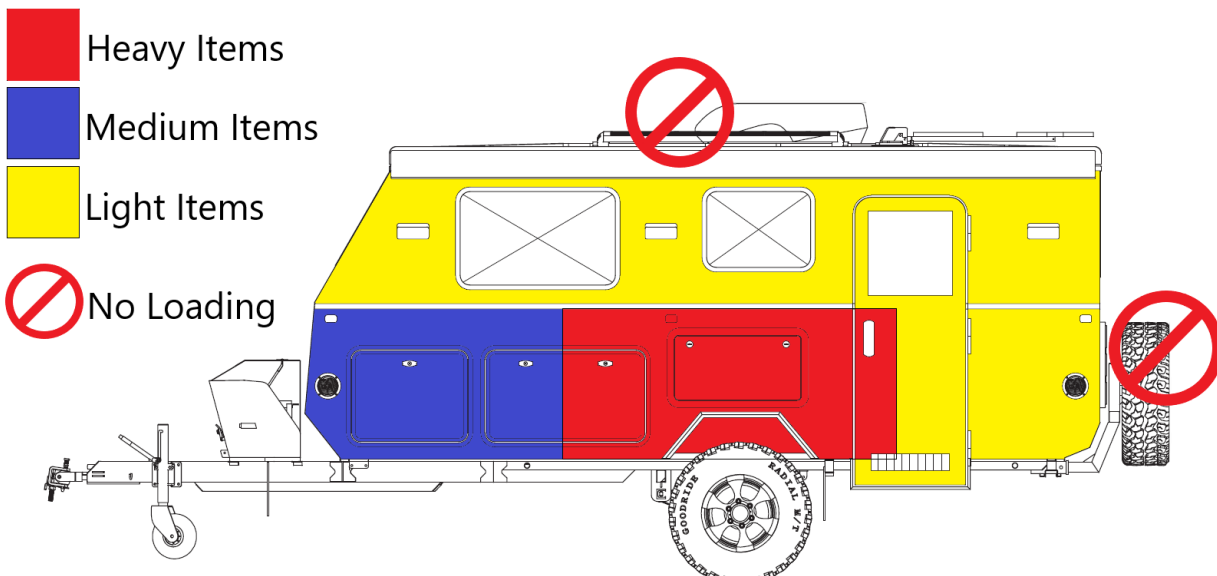
It is important to load your caravan correctly to distribute weight evenly and achieve a suitable ball weight load and prevent loading in a manner that can cause a Caravan to sway and/or roll excessively left and right. The industry optimum ball weight on a caravan is between 9 and 11% of the total Caravan weight. MDC Caravans fit into this category and 10% should be used as the starting point.

! 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 serious injury or death and/or property damage.

- Always load evenly to both sides of the caravan
- Load heavy weight over or as close to over the axle as possible and as low as possible
- Overhead cupboards should only be used for lightweight items such as clothes, personal items, bedding etc.
- Heavy cooking equipment should be stored in lower cupboards.
- Tinned food, bottled goods for cooking etc should be stored in the pantry cupboard.
- Never load in a manner that causes the ball weight to exceed the limit of the tow vehicle.
- Ensure no items can move during travel. Secure all items to prevent damage to the caravan.
- Consider water tank levels and how they may affect the balance front and back and the percentage of ball weight.
- Never store heavy items in overhead cupboards.

Load Distribution Guide

The diagram below illustrates best placements of items based on weight.



Ball Weight

When loading your camper, the generally accepted tow ball weight once loaded is around 10% of the total weight of the caravan. Use a ball weight scale to identify the ball weight and load the camper in a manner that achieves the desired weight. Ideally, once loaded the first time, take the caravan to a weigh bridge, and measure the total weight loaded including the weight on the jockey wheel. When the total weight is known, adjust the load locations to meet the desired balance considering 10% is the generally accepted benchmark.

Effects of Weight Distribution

The distribution of weight in a camper can influence the handling and performance. Overloading the front or rear may cause adverse handling and sway. Additionally, overloading the front or back can induce a pendulum effect that can cause dangerous sway and cause an accident.

Tyre Pressures

Tyre pressures have a large effect on the handling of your caravan. Tyres that are under the recommended pressure for the caravans' actual weight can cause a dangerous sway. It is important to follow the correct pressure guide. The guide below indicates pressure for the ATM which includes ball weight of 10%.

Pressures are cold inflation applicable to the standard Goodride 265/75R16 tyres fitted.

Actual Weight	Pressure PSI Single Axle	Pressure Kpa Single Axle
2400kg	55psi	379Kpa
2500kg	58psi	400Kpa
2600kg	60psi	414Kpa
2700kg	63psi	434Kpa
2800kg	65psi	448Kpa
2900kg	68psi	469Kpa
3000kg	70psi	483Kpa

Pre-Trip Inspection

Tyres

Before any trip check the following

- Correct tyre pressures
- Tyres in good condition free from damage and uneven wear.
- Tread is of legal and acceptable depth.

Wheel Nuts

- Ensure wheel nuts are tensioned to the correct torque using a torque wrench.
- All wheel nuts are in place.

Hitch and Chains

- Ensure hitch and chains are free of damage.
- Hitch locking mechanism functions correctly.
- Hitch is properly lubricated.
- Hitch articulates correctly.

Fire Extinguisher

- Extinguisher is properly mounted and within date.
- Extinguisher charge gauge is in green.

Brakes & Breakaway System

- Brakes operate correctly when both operated by manual control and via pedal.
- Electronic stability control is awake and in normal operation.

Lights

- Ensure all trailer lights are functioning.

Setting Up the Caravan

Choosing a Position

Your caravan will need a suitably sized site to accommodate the caravan and awning.

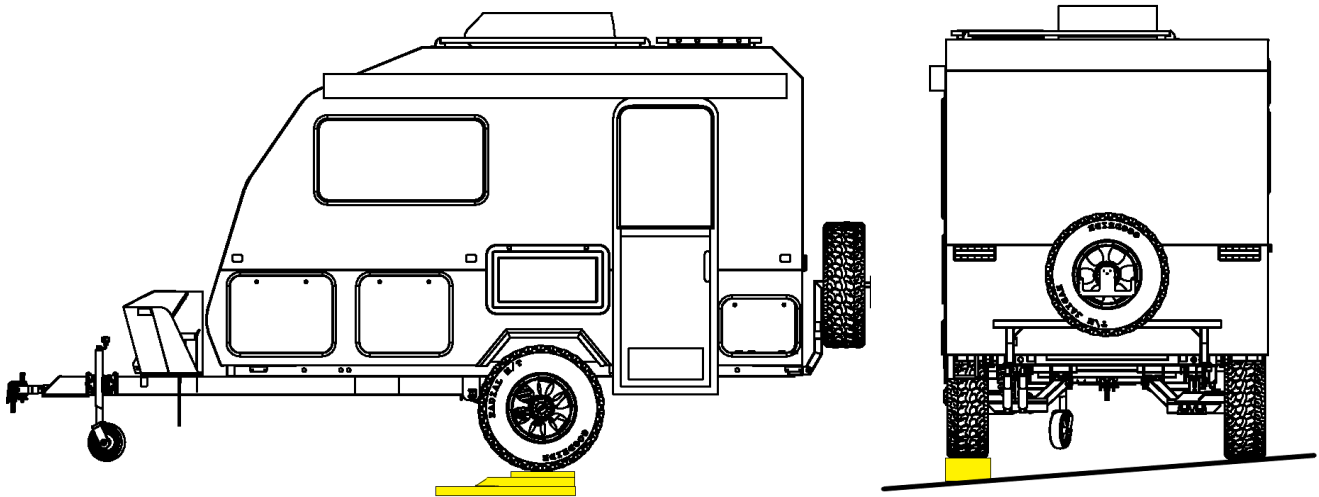
If using a free camp or uneven ground, choose a spot as level as possible that is firm. Avoid low sections that may flood during rain.

Leveling the Caravan

Before unhitching the caravan, ensure that the trailer is level from left to right by using the following.

Ramps

When levelling left to right, use a wheel ramp to raise the lower side and bring the caravan level.



Unhitching

1. Apply the handbrake as firmly as possible
2. Place wheel chocks to prevent the caravan from rolling
3. Disconnect the electrical connections
4. Disengage the coupling lock
5. Lower the jockey wheel and raise the coupling from the ball
6. Remove safety chains and breakaway lanyard from the vehicle

Jockey Wheel

Use the jockey wheel to level the caravan from front to back.

Stabiliser Legs

Once the van is level, lower the stabilizer legs and wind until firm. Do not overload the stabilizer legs, they are not meant to raise the full weight of the caravan, they are simply to stabilize and minimize movement when using the caravan.

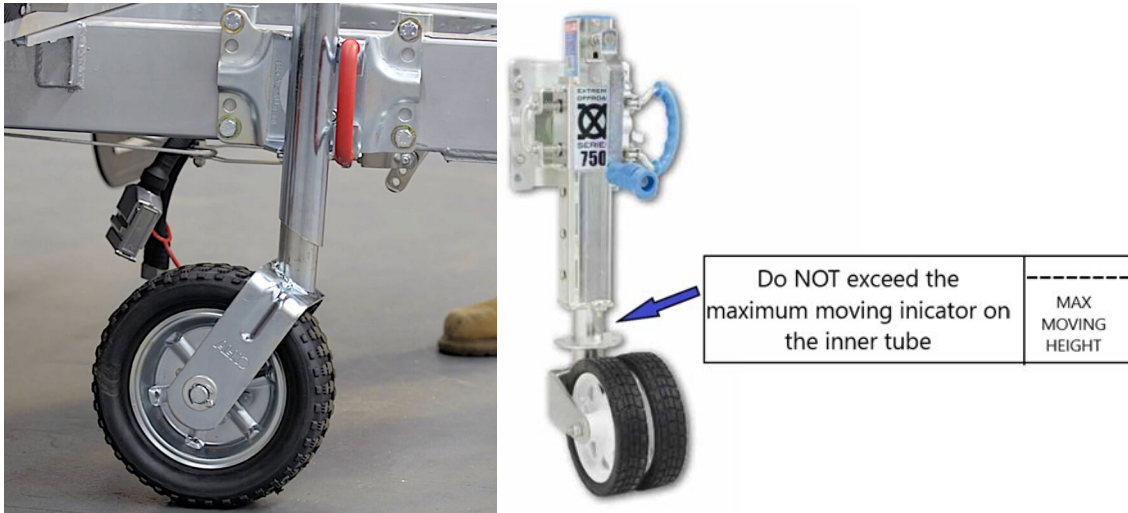
Weather

It is important to know the weather prediction for the area you are camped. Storms can be destructive with items such as awnings and annexes being particularly vulnerable to wind and storm damage

Operating the Jockey Wheel

The rated load capacity of a jockey wheel is achieved when the jockey wheel is retracted to its lowest position. Do not move on jockey wheel on grass, gravel or soft surfaces.

When moving the trailer on the jockey wheel, always lower it as far as possible but still allowing the wheel to swivel as you steer the trailer.



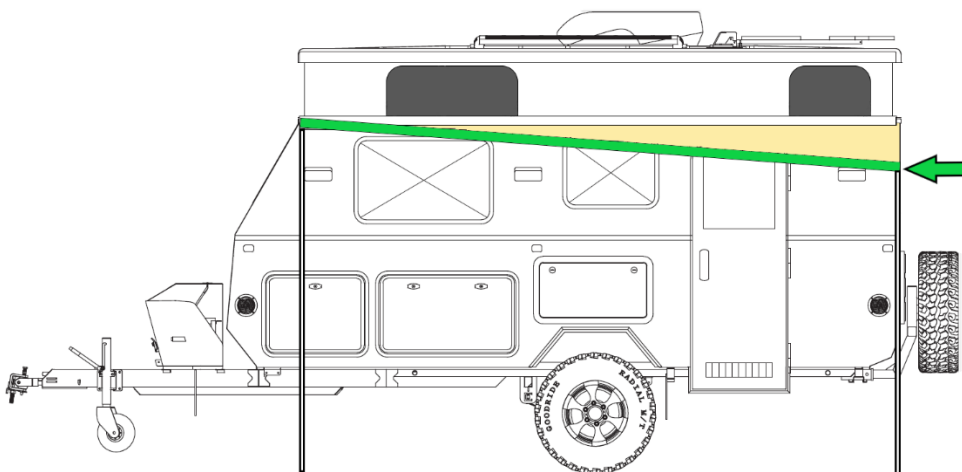
Stabiliser Legs

Stabiliser legs are installed to stabilise the caravan or camper when setup. Stabiliser legs should never be used to jack a trailer as they are comprised of small bevel gears held in place by small roll pins that will break if overloaded. Stabilisers are best set vertical or 90 degrees to the chassis where possible. When set at an angle the user must be careful not to overload them causing locking pins or the leg itself to bend. Never use impact wrenches to wind the legs, the impact may damage the gears. When using a power tool, use an electric drill with a safety clutch set low to medium to avoid injury or damage to the stabilisers.

Electric Awning

When extending the awning always support to front as it extends. Do not allow the awning to carry the full extended weight as this may damage the hinges. Support the end manually by hand or by using the extendable legs. Never allow water to pool on the awning, during rain lower one side to a level that allows the water to freely run off and not pool. In light to moderate breeze guy ropes should be used. In stronger winds the awning should be retracted completely. Always set the awning for wet conditions if leaving up overnight in case of unexpected rain. If high winds are possible, pack the awning away overnight. It is your responsibility to know the weather prediction.

During rain, the awning should be lowered on one side as illustrated below.



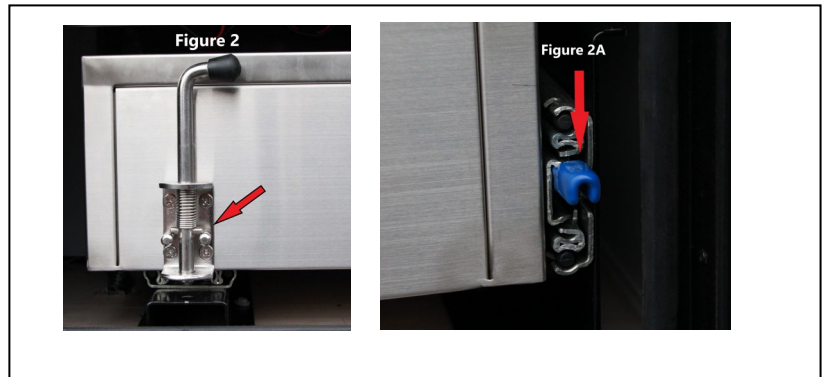
Kitchen

To extend the kitchen from the caravan, press down the blue slide tab, raise the pad bolt and pull kitchen out. The kitchen will lock into place when extended. To put kitchen away, again press down the blue tabs and push back into place.

Always install the support leg when the kitchen is extended per diagram 2



Diag: 2



To connect the gas, plug the hose into the gas bayonet as per the diagram below.



Caution

CAUTION – Use of the slide out kitchen cooktop without the annex or awning may adversely affect the safety and operation of the appliance.

Packing Down Your Caravan

NOTICE

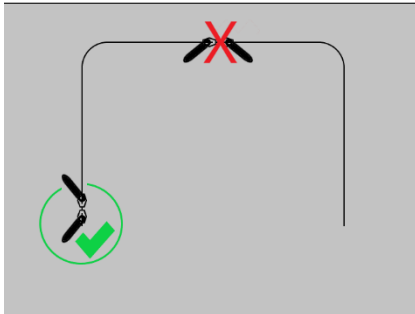
When packing down your caravan ensure the following:

- All gas and electric appliances are turned off.
- Gas is turned off at the gas bottle.
- All loose items are secured and unable to move and damage themselves or the caravan.
- All cabinet doors are secured and locked along with all drawers closed.
- Site power lead is removed and stowed.
- The step is raised and secured.
- All roof hatches lowered and secure.
- All windows closed and locked.
- Main door is closed and locked.
- All dust covers in place and secure.
- Secure Ensuite doors and close toilet

IMPORTANT NOTICE

Before lowering the roof, you **MUST**:

- Remove all items on top of cupboards.
- Position roof skirt vent zippers as below.



- Once roof is lowered, connect all 4 over center latches on the roof.

Towing the Caravan

Hitch

Towing with Trucks & Buses

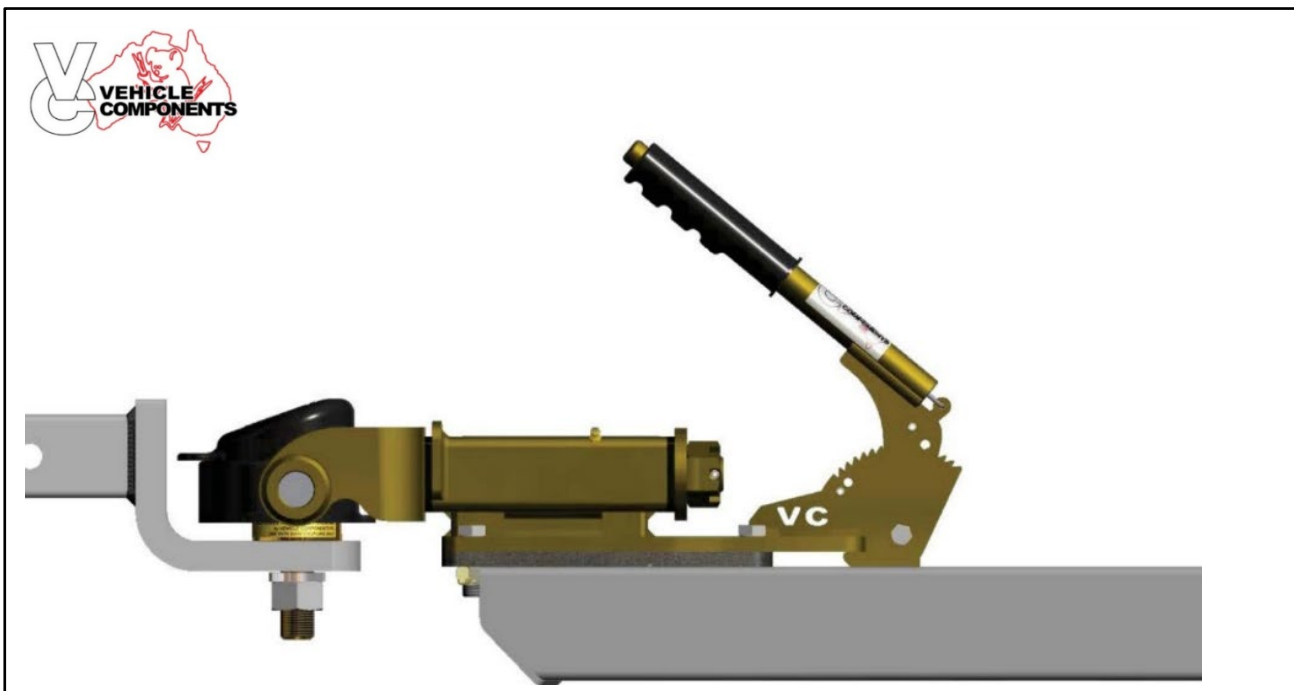
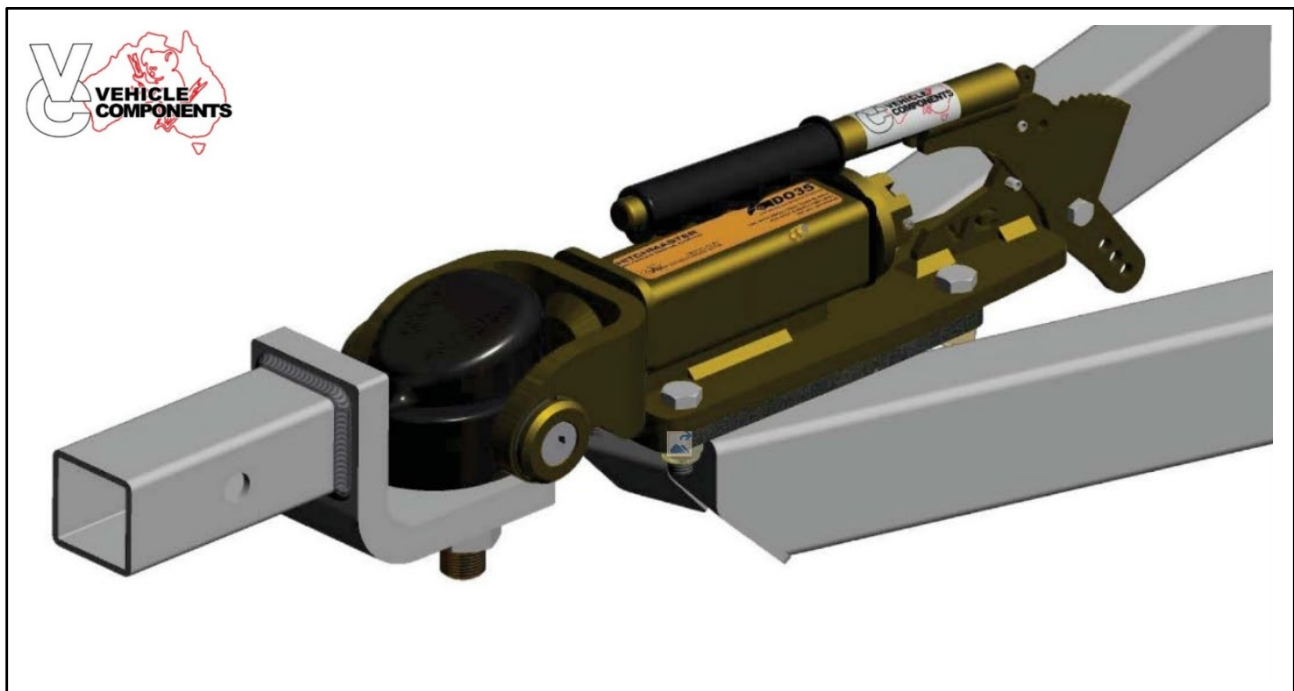
If you intend to tow your caravan with a truck or heavy commercial vehicle you should fit a hitch system to minimise the lash effect of the commercial suspension and distance from the rear axle to the tow point. Truck suspension can be harsh, particularly in off road conditions. The long distance between the axle centre and the point of attachment can be quite long further exacerbating the effect putting stress on components.

Using a shock absorbing hitch will reduce the effect considerably.

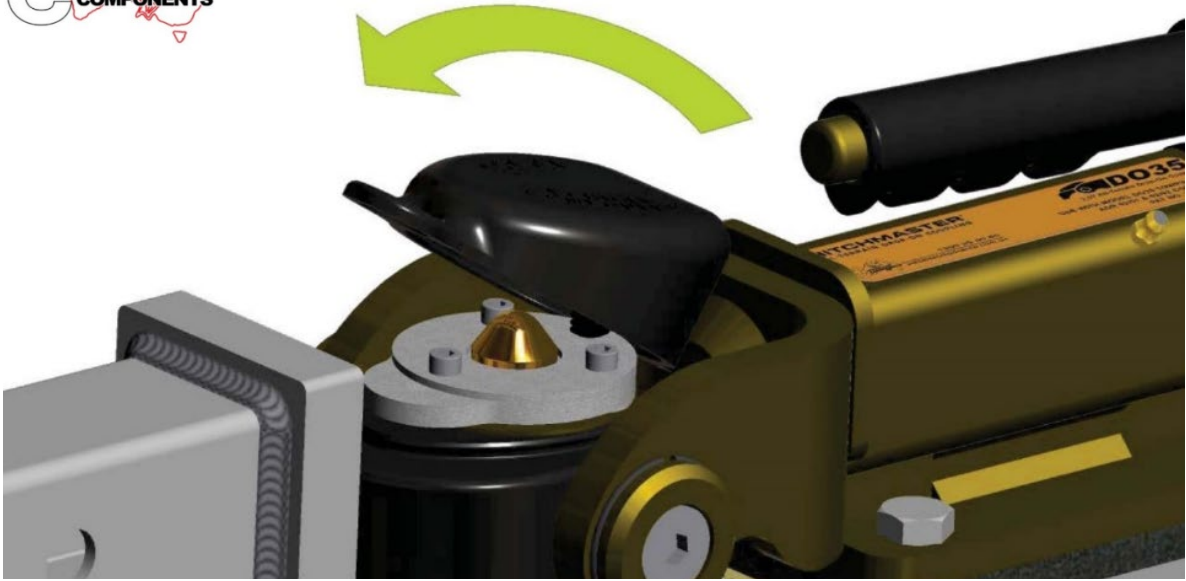


How to Hitch your coupling

Here is a short guide on how to safely use your coupling to couple and uncouple the trailer from the towing vehicle.



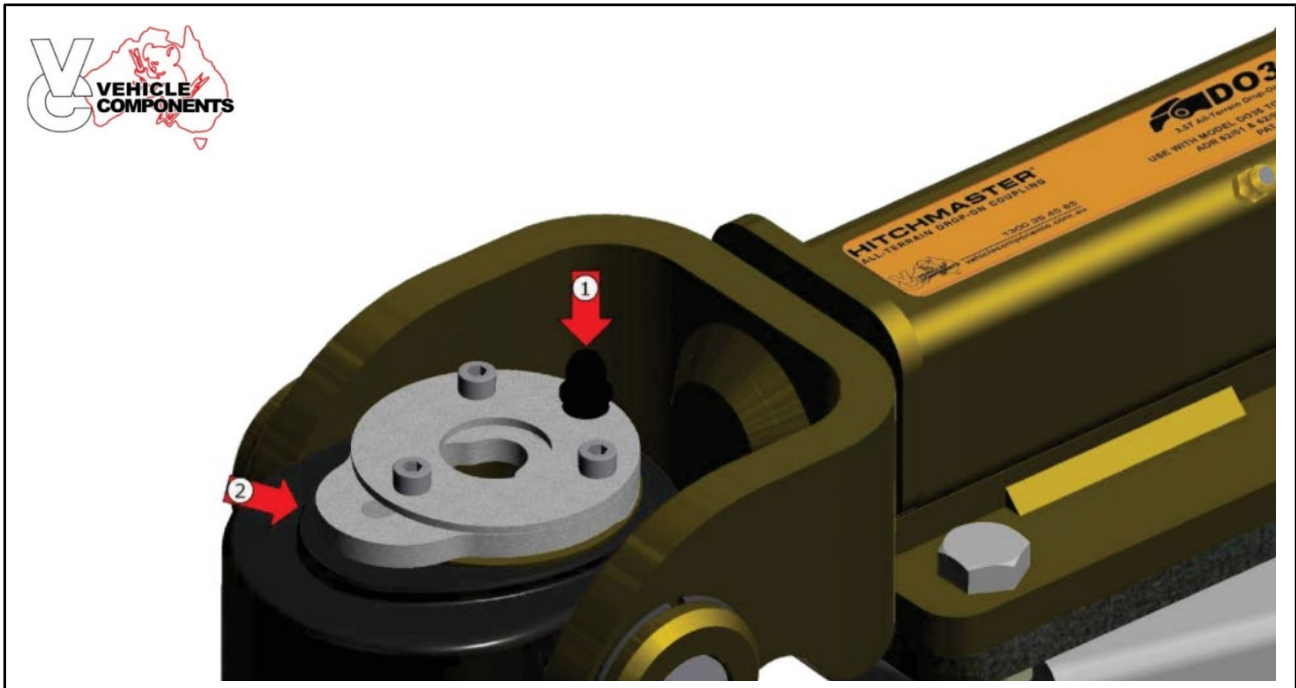
Make sure the handbrake is applied prior to coupling and uncoupling.



Make sure the dust cap is securely connected to the bump cover. This is done by locating the rear lip on the dust cap onto the groove of the bump cover and then pushing it in a downward motion until the dust cover is secure (there should be a slight click when it has been assembled correctly) Test if the dust cover is connected to the bump cover by applying a slight upward force to the dust cover, it shouldn't separate. This procedure should be applied if you are uncoupling or coupling up.

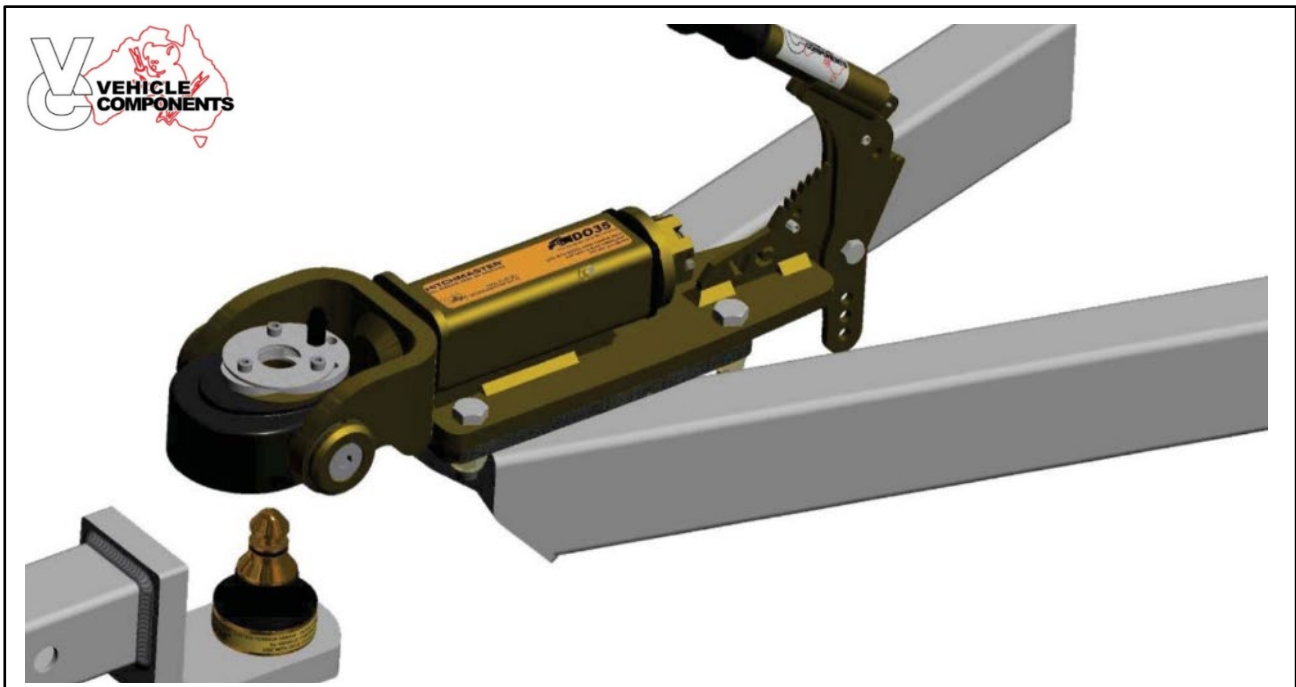
Coupling

STEP 1



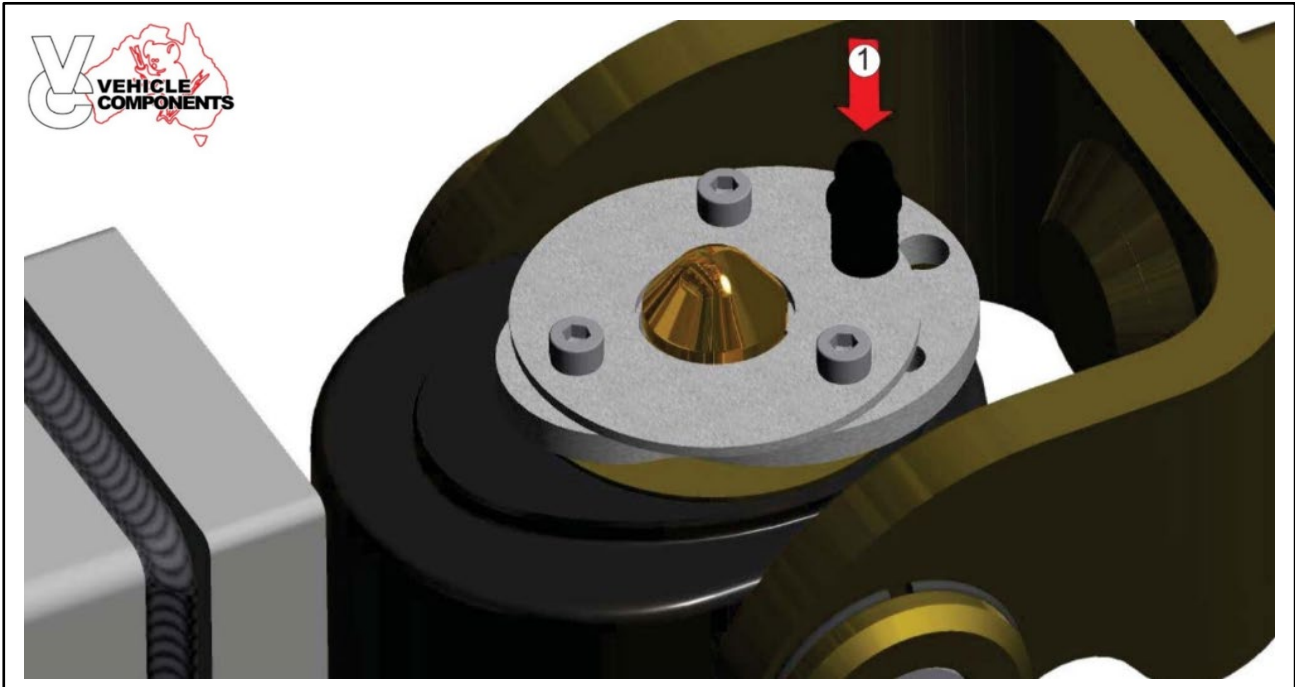
Push down the button (1) and push the locking mechanism back (2). When the locking mechanism (2) is all the way back, release the button (1) locking the plate in place

STEP 2

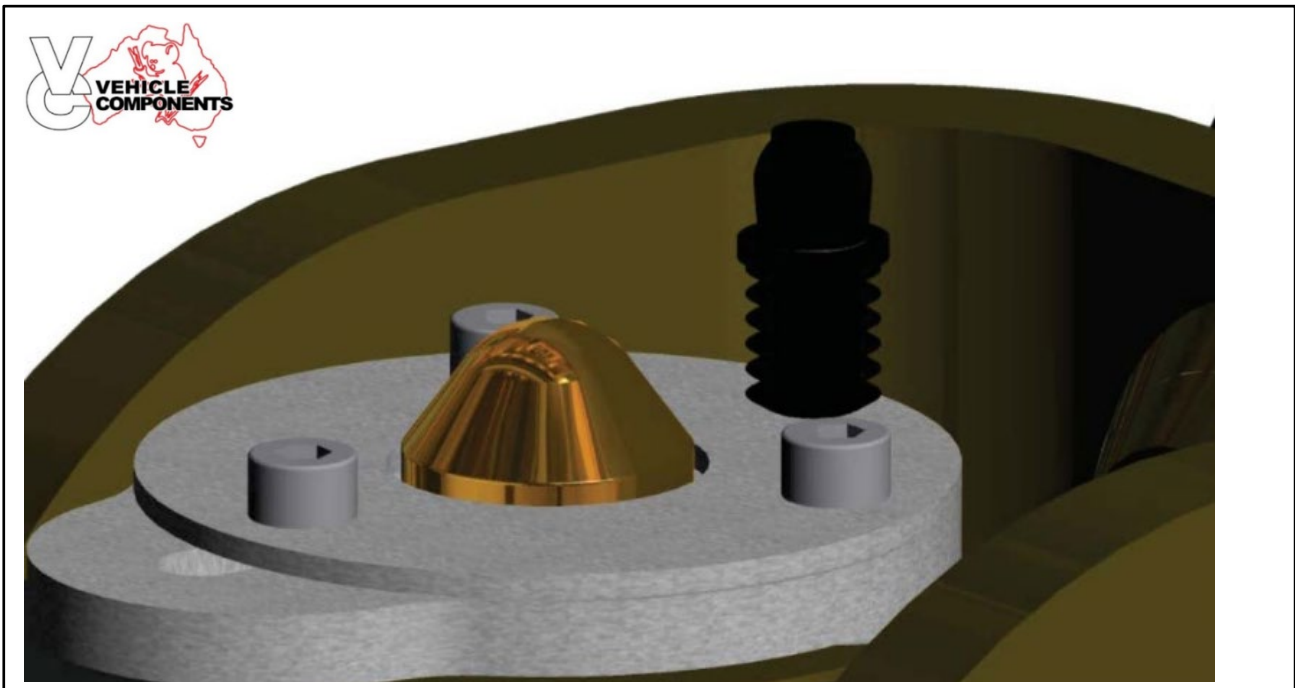


Offer up the tow pin to the coupling making sure the tow pin cover is removed and there is no visible debris on it. Locking plate should be in unlocked position as shown. Lower the coupling onto the tow pin.

STEP 3



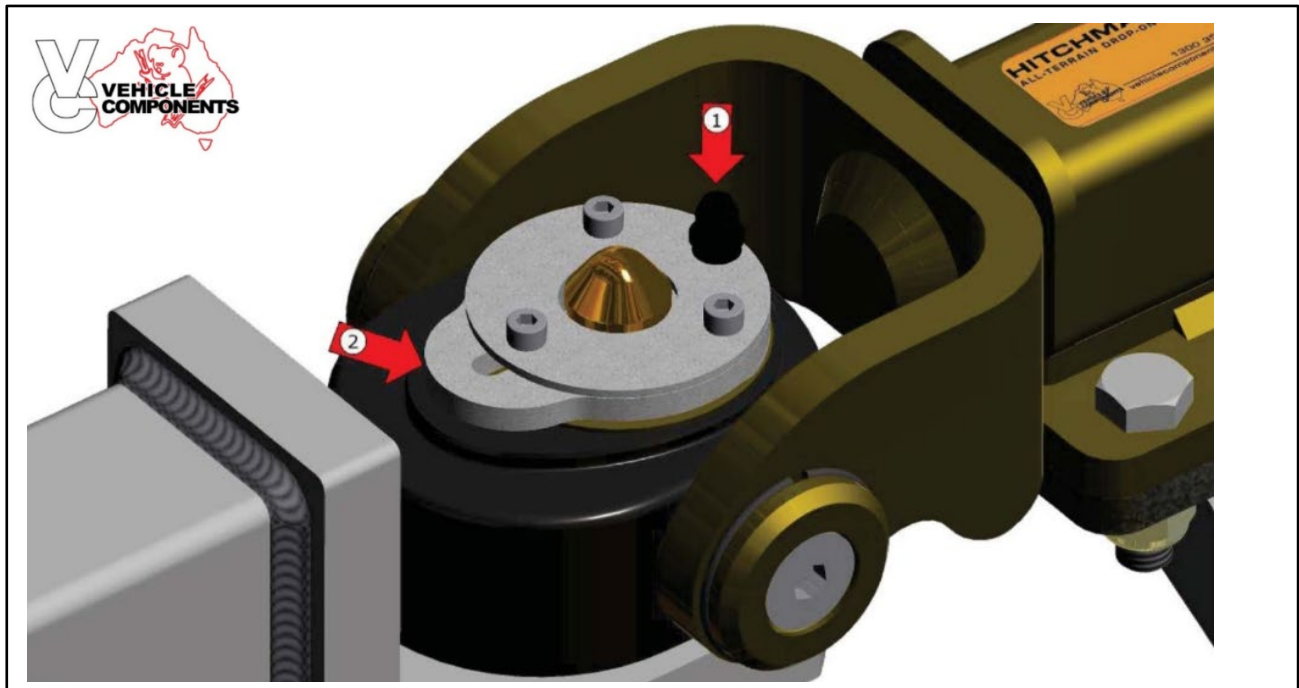
Make sure the tow pin is seated inside the universal and the tow pin top is sticking out of the locking mechanism (see below). Press the button (1) to release the locking mechanism there will be an audible locking noise at which point the mechanism will return to the initial position as shown in step 1. Verify the pin is correctly through the mechanism and assemble the cap. If the cap will not fit check the locking mechanism is in the correct locked orientation.



Detail view of pin through locking mechanism.

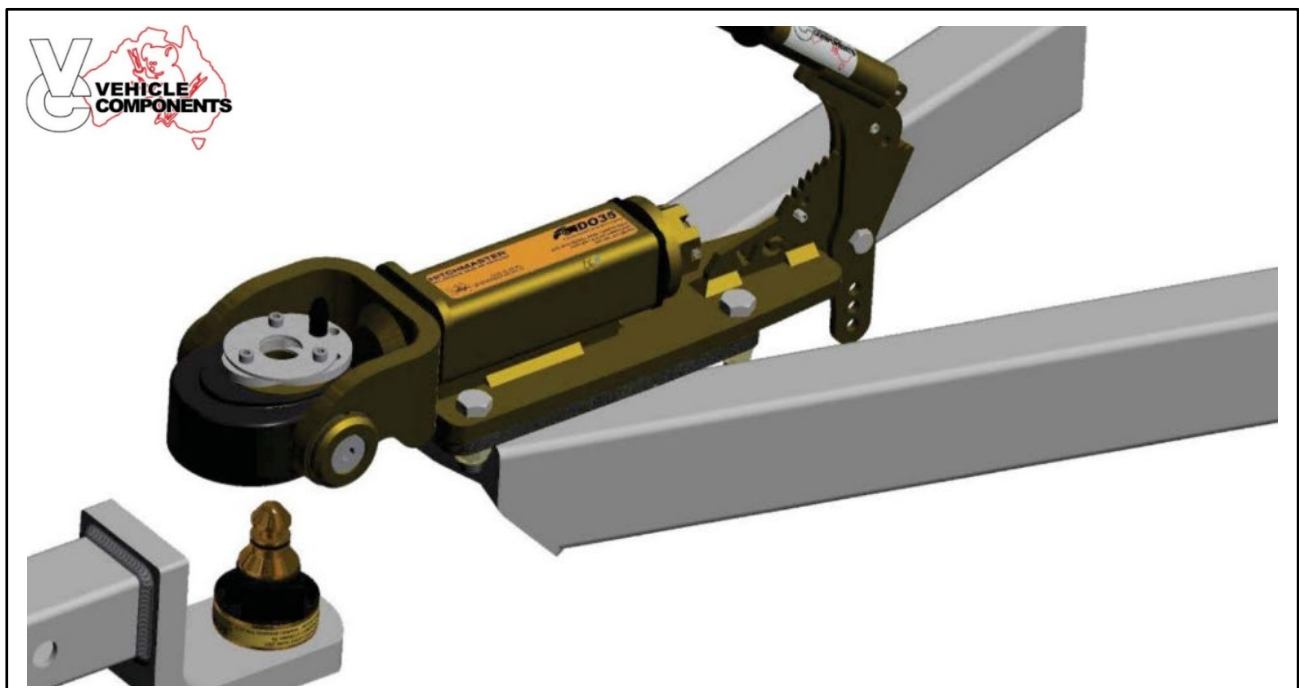
Uncoupling

STEP 1



Push down the button 1 and push the locking mechanism back 2. When the locking mechanism is all the way back release the button while holding the mechanism to ensure it does not spring back to the locked position.

STEP 2



Lift the coupling up off the tow pin.

Connecting the Breakaway

The breakaway lanyard is connected to a simple switch on the drawbar. When connecting the lanyard to the tow vehicle it should be connected to a solid part of the vehicle. Do not incorporate its connection with the safety chains.

Ensure the electronic sway control system is awake and in normal operation.



Breakaway Switch



Lanyard Connection

- DO NOT CONNECT THE BREAKAWAY LANYARD TO THE SAME POINT AS THE SAFETY CHAIN SHACKLES.
- DO NOT USE THE BREAKAWAY AS AN ALTERNATIVE TO THE HANDBRAKE AND DO NOT REMOVE THE PIN AS AN ALTERNATIVE SECURITY MEASURE. REMOVING THE PIN WILL RAPIDLY DISCHARGE THE BATTERIES.
- IT IS A MANDATORY REQUIREMENT THAT THE BREAKAWAY BATTERY SOURCE BE CHARGED DURING TOWING.
- NSW REQUIRES A BATTERY MONITOR VIEWABLE FROM THE DRIVERS POSITION WITH A MINIMUM OF A VISUAL ALARM FOR LOW BATTERY VOLTAGE

Connecting the Safety Chains

Chains should be crossed over and connected with suitable rated shackles. Ensure they are connected in a way to prevent them dragging on the road but not too tight as to restrict the articulation of the vehicle and trailer combination.

Connecting the Electrics

When connecting ensure the electric cables to your tow vehicle cannot drag on the road or foul the coupling. If necessary, use zip ties or like keep them neat and safe from damage.



Wireless Rear-View Camera

A wireless rear-view camera has been factory fitted on the rear of your caravan. The unit is connected to your caravan's parking light circuit, allowing the camera to be used when reversing. Activate the camera by turning your vehicle lights on.



To use the system:

1. Plug in the screen to any available 12V accessory socket in your vehicle.
2. Turn on your parking lights whilst connected via your caravan's trailer plug and the system will start up immediately on power.
3. The screen and camera will synchronise automatically within 5-10 seconds.

The system can be used not only for additional assistance with reversing your caravan but can also assist in monitoring traffic behind your caravan and assistance in manoeuvring such as lane changes.

Troubleshooting the rear-view camera

Symptom	Corrective Action
No Signal	Check whether the car charger (12V accessory socket) is plugged in and has power Make sure only original car charger (12V accessory socket) that was supplied with the monitor is being used Check the camera and monitor are paired
No Picture	1. Check there is power going to the camera by making sure the caravan tail/parking lights are ON 2. Check the monitor is paired to the camera. a. Power on the monitor and camera. b. Press the Menu button to enter the menu interface. c. Press ▼/+ then  to select and enter PAIRING. d. Press ▲/- or ▼/+ buttons to select a channel (CH1, CH2, CH3, CH4) to pair the camera to. e. Press  to confirm the channel and the pairing function will run for 10-seconds. f. The picture will be displayed on screen once completed. Note: If no picture displays after pairing, please re-try the pairing process but removing power to the camera entering pairing mode and re-powering the camera within the 10-second pairing window.
No Sound	Check whether the sound is turned off in the monitor settings Sound will only work when the screen is in single Channel mode
Dark picture	Check brightness/contract settings are adjusted correctly
No Colour	Turn off the power to the camera and monitor and re-power the system (Restart system)

Unable to record	Check an SD card is inserted and in the correct orientation Make sure the SD card being used as been formatted before use SD card storage may be full
Screen has excessive glare	The monitor comes supplied an Anti-glare screen and a screen protector. Make sure the screen protector has been removed before use.
Connectivity issues such as image lag, dropping out, excessive pixelization	1. Make sure the caravan tail/parking lights are ON 2. Make sure the monitor is plugged into a live 12V socket 3. Check camera is paired with the monitor (see above) 4. Make sure supplied antenna is screwed firmly into the monitor screen 5. Uncoil the power cable of the monitor – this may cause electromagnetic interference 6. If still unsatisfactory contact MDC (warranty team to escalate to MDC compliance team internally)



FURTHER READING

For more information, refer to the camera system instruction manual provided.

Disclaimer: External impacts such as interference, power lines, speed of travel and weather may affect the range, responsiveness, and visibility of the device. As such never use the camera solely and always actively observe your surroundings. This product has been added as an **ADDITIONAL** safety product and should never be used as a substitution for active supervision. MDC shall not be liable for any loss or damage from not following this and the details within the products instruction manual.

Charging the Caravan

Mains Power

Your RV will charge from mains power via the Projecta Inverter Charger. The factory battery in your RV is Lithium Iron Phosphate (LiFePO4)

Solar Power

The roof mounted solar panels will charge automatically provided there is enough radiated energy from the sun.

Motor Vehicle

Your towing vehicle should be fitted with an Anderson plug connection to charge your caravan while towing.

A 12-pin trailer plug is also required. In addition to the standard wiring to pins 1 to 7, power must be supplied to the number 12 pin for the trigger wire for the DC-DC charger while the engine is running.

- The IDC25X is programmed to favour the solar power supply until the supply falls below the minimum threshold for the controller. By supplying power to the trigger wire through the #12 pin, the unit will switch mode to favour the supply via the Anderson plug when the tow vehicle engine is running.

Vehicles that have a "smart alternator" require the IDC25X to be activated via the trigger wire for the ECU to detect the charge requirement of the RV battery.

Preparing for Bad Weather

During inclement weather, the following should be done:

- Close all roof vents and hatches to prevent water entering.
- Protect the awning from high winds by retracting or securing with guy ropes and pegs.
- Ensure your caravan is not parked in ground that will become boggy and prevent exiting the camp area
- Close all external doors and hatches to prevent water ingress and wind damage

Packing Down Your Caravan

When packing down your caravan ensure the following:

- All gas and electric appliances are turned off
- Gas is turned off at the gas bottle
- All loose items are secured and unable to move and damage themselves or the caravan
- All cabinet doors are secured and locked along with all drawers closed
- Roof is lowered, and over center latches are locked with safety pin engaged
- Site power lead is removed and stowed
- Doorstep is raised and secured
- All roof hatches lowered and secure
- All windows closed and locked
- Main door is closed and locked
- All dust covers in place and secure
- Secure Ensuite doors and close toilet

Storage & Care

Long Term Storage

To maximise the life of your caravan you should consider additional protection from the elements. UV light and moisture can have an adverse effect on materials when left unprotected outside. This section outlines some of the things you can do as an owner to protect your investment.

Interior

Moisture in the smallest amounts can cause mould. High humidity and cooling temperatures can create condensation, additionally condensation can form under mattresses due to temperature differences between warm bodies on top and the bed base being cold from outside temperatures. As a precaution you can do the following:

- Check under mattress for moisture before packing up. If moisture is found allow to thoroughly dry before closing your camper.
- Store 1 or 2 moisture absorbing packs/dehumidifier packs in the caravan to draw away any residual water vapour.
- If packing up with damp or humid conditions, open and dry out the caravan at the first opportunity when returning home.

Exterior

Ensure all seals on the caravan have proper compression at 30-50%, are free of dirt and have nothing protruding past the seals. UV light and the elements can over time cause seals and fittings to perish and become brittle. The use of a caravan cover will extend the life of components and keep your investment looking better for longer.

Batteries

When storing your RV, ensure all power is turned off to ensure the battery isn't drained. It is recommended that it remains at 50% charge and recharged every 3 months when stored.

For further information regarding your lithium battery, refer to the LiFePRO+ website (www.lifeprolithium.com.au)



Your caravan is supplied with an MDC engineered coupling lock device. This device is designed and manufactured to deter the theft of your new caravan.

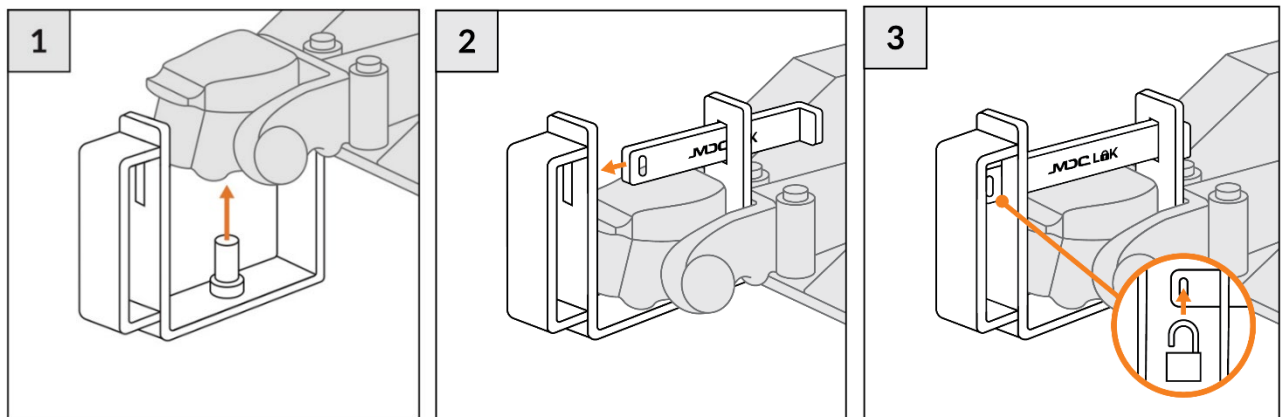
How to attach your lock to your Coupling:

1.

a. **Cruisemaster DO-35 coupling**

Make sure the dust cap is securely connected to the bump cover. This is done by locating the rear lip on the dust cap onto the groove of the bump cover and then pushing it in a downward motion until the dust cover is secure (there should be a slight click when it has been assembled correctly). Test if the dust cover is connected to the bump cover by applying a slight upward force to the dust cover, it shouldn't separate.

1. Slot the pin into the centre of the coupling, aligning the back tab to run in-between the gap at the rear of the coupling.
2. Insert bar as shown.
3. Insert padlock.



Care and Maintenance of the Caravan

Protection of Finishes

Paint

The paint coatings on your caravan are no different to that of your car in that they need regular care and maintenance. Rubber seals and applied sealants on caravans can shed polymers and pigments that can stain paint finishes if your caravan isn't washed regularly.

Washing: Only use mild detergents free of ammonia when washing your caravan. Always check the label to ensure the washing solution is nonabrasive, contains no ammonia or caustics.

Polishing: New caravans should only be polished with wax-based polishes that are nonabrasive. When removing scratches from paintwork use a fine finishing compound. Cutting pastes are too abrasive and will expose the base material.

Protection: Carnauba wax is an excellent protection against oxidation. The paint on your caravan should be waxed annually regardless of being kept under cover to protect the surfaces from oxidation.

Acrylic Windows

Windows should be cleaned with a clean, soft, nonabrasive cloth to avoid scratches and soapy water.

****Do not use any cleaners that contain ammonia or solvents. ****

Internal Finishes

Laminates and internal wall surfaces should be cleaned with a damp soft cloth. For stubborn marks use a mild detergent based cleaner.

****Do not use cleaners that contain ammonia or caustics****

Ensuite Finishes

Never use harsh detergents or bleach-based products on the toilet or sealants in the ensuite. Use of such products will damage the seals and sealants.

Mirrors

Do not use solvents or chemicals when cleaning mirrors. Warm water and a soft, clean cloth are the best method. Cleaners and solvents may affect the reflective backing causing what's known as "creep" where the edges of the mirror discolour.

Galvanised Finishes

Your galvanised chassis will need maintenance when used off road. The zinc coating although being tough is still susceptible to damage from stones chips to the coating should be maintained using a zinc rich coating.

High Tensile Bolt and Fittings

Zinc plated bolts and fittings should be coated with a protectant such as a lanolin-based spray. The proprietary item "Lanotec" is recommended.

Stainless Steel

Do not use abrasive cleaners on stainless steel. Purpose made stainless steel cleaners are recommended as are solutions such as 10% white vinegar in water.

Fabrics

Fabrics may not be colourfast and should be washed gently by hand on their own or dry cleaned.

Corrosion Protection

Reasonable steps should be made by the customer to protect the product from corrosion. Seaside areas, areas with high salt contents in soil and roads that are salted during snow conditions can greatly accelerate corrosion. When used in these areas the product should be thoroughly washed after use and unpainted metal surfaces should be coated in a suitable protectant. Lanotec lanolin spray, Inox or similar are recommended.

Roof Maintenance

Sealants

Roof sealants should be inspected every 6 months for condition. If the sealant has perished or adhesion has failed, it should be repaired immediately.

Solar Panels

Accumulated dirt and soiling can affect the performance of the solar panels. Panels should be cleaned as necessary to prevent this. Sealants around solar panel mounts should be checked annually to ensure they are in good condition.

Caravan Body Maintenance

Locks and Latches

Locks need regular maintenance to ensure they operate correctly and stay free from corrosion. Diligent use of WD40 or Inox will help in this regard. Both locks and latches need to be checked for adjustment to ensure correct seal compression.

Rubber Seals

Rubber seals are critical in reducing or eliminating dust and water ingress. Damaged or worn seals should be replaced immediately. Seals that are overly compressed will stay flattened and be less effective. (See maintenance schedule)

Sealants

Regular checking of sealants will help avoid any likelihood of water ingress on your caravan. Off road use can cause mechanical damage to seals from vegetation and stones striking the caravan body. 6 monthly inspections should be undertaken, and any necessary repairs made.

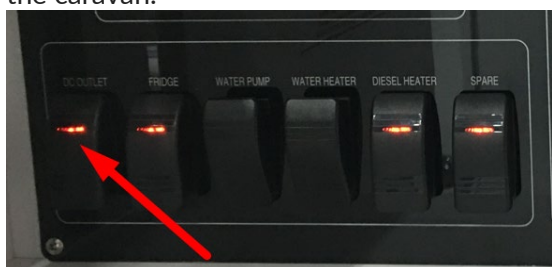
TV Antenna

Milenco POWER 900L omnidirectional antenna. This antenna comes fitted with a high-gain, low noise amplifier which is pre-wired to all the TV antenna F-type outlets throughout the caravan.

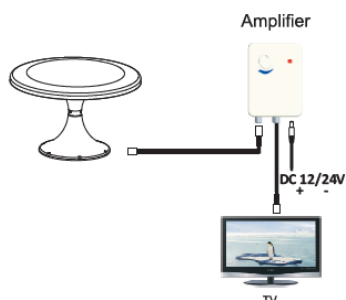


Omnidirectional TV antennas do not require rotating to obtain a TV signal, their radiation pattern allows them to receive high-quality reception from all angles without the need to locate the closest signal source. To use the Milenco Power 900L, there are only 3 steps:

1. Supply 12V power to the amplifier and TV, by switching on the “DC OUTLETS” on the control panel of the caravan.



2. Make sure the TV is connected to any F-Type outlet in the caravan



3. Run a channel scan on the TV.

If there are local terrestrial signals (DVB-T, ISDB-T, DMB-T/H, ATSC) or AM radios, the antenna will receive them.

NOTE: Don't forget to run channel scan if the caravan has moved to a new location since previous use, as the new location will have difference reception/signals available.

Solar Panels

Accumulated dirt and soiling can affect the performance of the solar panels. Panels should be cleaned as necessary to prevent this. Sealants around solar panel mounts should be checked annually to ensure they are in good condition.

Sealants

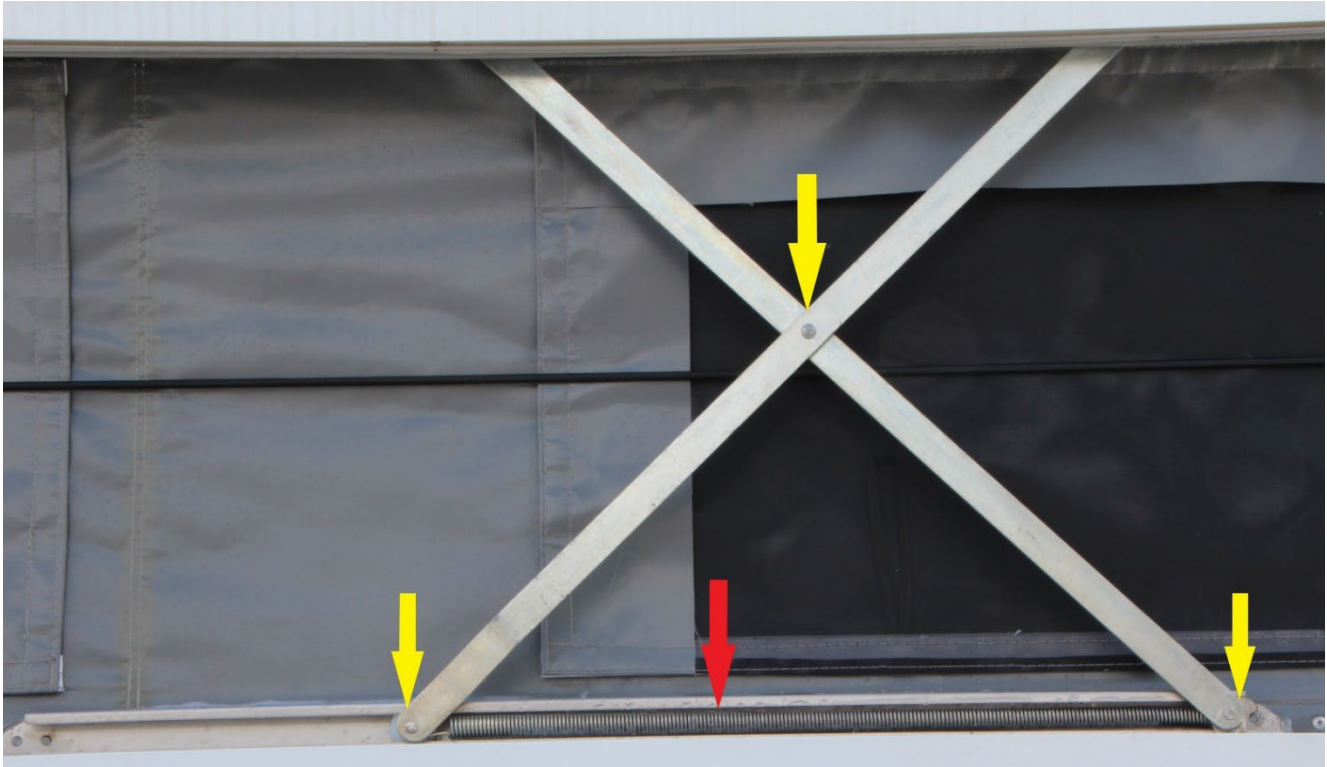
Roof sealants should be inspected every 6 months for condition. If the sealant has perished or adhesion has failed it should be repaired immediately.

Canopy Lifting Mechanism

The canopy lift mechanism requires maintenance as per the maintenance schedule.

Yellow arrows indicate light lubrication with lanolin-based lubricant. (Every 6 months)

Red arrow indicates protecting the spring with a lanolin-based lubricant. (Every 12 months)



Roof Skirt Elastic Cord

The elastic cord surrounding the PVC roof skirt is placed to ensure the skirt pulls inward when lowering the roof. This is an important function that protects the skirt from mechanical damage from the lifting mechanism and getting pinched by the roof. Regular inspection and replacement when necessary is part of the maintenance schedule. The illustrations below show the correct tension marked by a green ✓ and incorrect shown by the red ✗



Caravan Body Maintenance

Locks and Latches

Locks need regular maintenance to ensure they operate correctly and stay free from corrosion. Diligent use of WD40 or Inox will help in this regard. Both locks and latches need to be checked for adjustment to ensure correct seal compression.

Rubber Seals

Rubber seals are critical in reducing or eliminating dust and water ingress. Damaged or worn seals should be replaced immediately. Seals that are overly compressed will stay flattened and be less effective. (See maintenance schedule)

Sealants

Regular checking of sealants will help avoid any likelihood of water ingress on your caravan. Off road use can cause mechanical damage to seals from vegetation and stones striking the caravan body. 6 monthly inspections should be undertaken, and any necessary repairs made.

Electrical Systems

Low Voltage (240Vac) Power System

Mains/Shore Power

MDC Caravans are built with an integrated 240V Alternating Current (240Vac) power supply system for charging the battery system and running fixed appliances, such as the Air Conditioner, and domestic appliances, such as laptop chargers, television sets, toasters etc. Primary supply for this system is by connecting to an external power supply, such as the national grid or a local site supply. Your caravan connects to these supplies via an external 15A socket inlet located on the offside wall of the caravan. *See Fig.3* The Projecta INVCHR2 Inverter-Charger in your caravan is directly wired to the 240Vac system and the charging function is powered via the 15A exterior socket. To use grid or site power, you will require a 15A power lead supplied by a 15A outlet.

15A supply leads are physically different from standard 10A leads found in most homes. 15A plugs have a larger earth pin which prevents them from being used in incompatible sockets. *See Fig.4.*



Fig.3



Fig. 4



NOTICE

*When charging at home, most domestic dwellings are not built with 15A outlets. Where a 15A outlet is unavailable you will need a conversion box that will step up from 10A to 15A with a safety switch. *See Fig 5.* Never leave power leads coiled when in use, lay the lead out back and forward in a manner that will not be a trip hazard or risk damage to the lead.*



Fig 5

240VAC Overload Protection

Residual Current Device (RCD) Safety Switches

The primary shore power safety switch or Residual current Circuit Breaker with Overcurrent protection (RCBO) is located inside the caravan near the entryway. *See Fig 6.* In the event of a shore power fault, this switch will quickly cut power to the caravans 240Vac system.

- To test the switch, press the blue *TEST* button and the switch will disengage and open the circuit.
- To reset the switch after it has tripped or been tested, push the lever up into the on (I) position.



Fig 6

The primary inverter output power safety switch RCBO is located on the INVCHR2 inverter-charger unit. *See Fig. 7.* This is accessible externally via the hatch located on the offside of the caravan *See Fig 8.*

- To test the switch, press the yellow *TEST* button and the switch will disengage and open the circuit.
- To reset the switch after it has tripped or been tested, push the lever up into the on (I) position.



Fig. 7



Fig 8



NOTICE

It is recommended to test all RCD switches monthly.

240VAC Distribution

Throughout the caravan are multiple 240Vac General Purpose Outlets (GPOs), the same as found in most domestic dwellings and businesses.

- Each GPO is directly wired to the 240Vac system and can be powered from shore power or the INVCHR2 inverter-chargers inverter function.
- Each GPO is individually switched *See Fig 9*



F

Automatic AC Power Transfer

The Projecta INVCHR2 Inverter-charger is fitted with an AC transfer switch which manages the 240Vac power automatically switching between shore power and inverter power.

In case of poor AC mains power due to poor voltage/ frequency or waveform characteristic, the Inverter Charger will switch to inverter and battery power.

In case of AC mains failure or exceeding the maximum AC input current set by the user, the Inverter Charger will initiate a quick switch to inverter, which will guarantee continuous power. When stable AC power is resumed, the inverter charger will switch back to AC mains power after a 5 second delay. Due to its ultra quick transfer design, as quick as 0ms. The Inverter Charger could be used as a UPS.

240VAC Service and Isolation

Located near the entryway of the caravan are two control switches used for isolating the 240Vac system.

- The rotary style switch, *See Fig 10*, if turned to the OFF position will isolate All 240vac power from the 15a inlet, this includes the primary shore power RCD and INVCHR2 inverter-charger. This switch is intended for **SERVICE USE ONLY** and should not be used as a power switch during normal operation.
- The light switch style switch, *See Fig 11*, is when switched to the OFF position will isolate the Air Conditioner from the 240Vac system, including the INVCHR2.



Fig 10



Fig 11



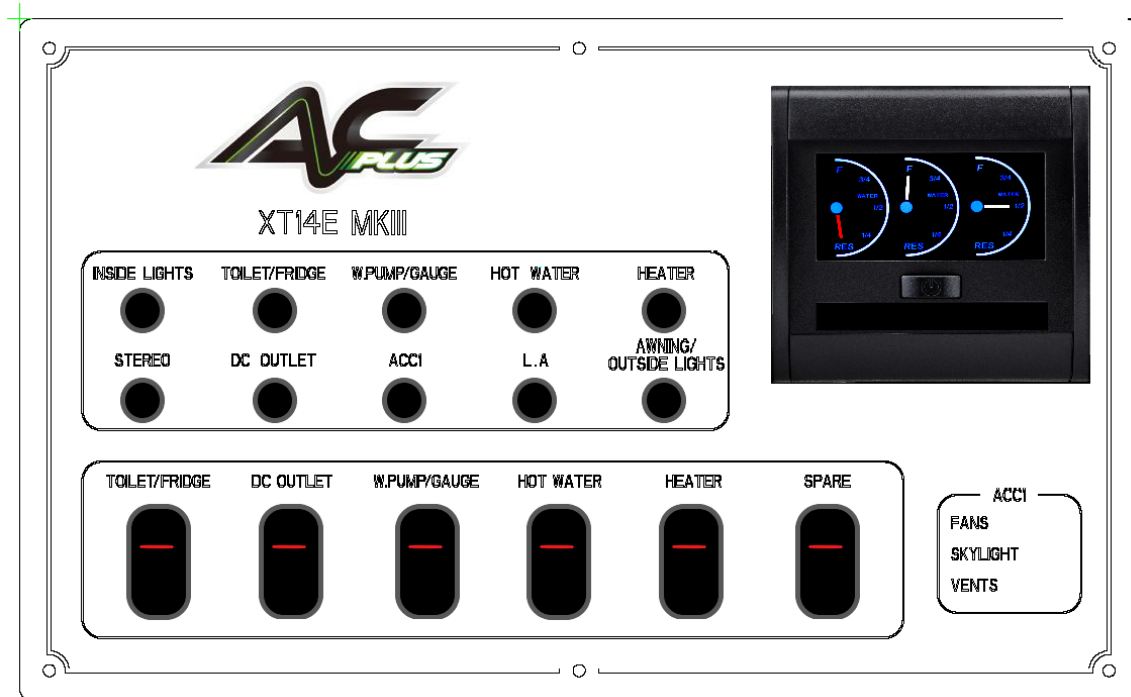
NOTICE

DO NOT cut 240Vac power to the air conditioner whilst running, only use the remote as the air conditioner has a soft shutdown function and cutting power whilst running may damage the unit. Refer to the air conditioner OEM documentation for further information.

Extra Low Voltage (12Vdc) Power System

Distribution Switchboard Control Panel

Located in overhead cabinets this panel is the primary location for the 12Vdc power system. It houses the main rotary isolator switch for all non-constant 12Vdc loads on the batteries, rocker switches to control the various circuits throughout the caravan and mini circuit breakers protecting these circuits. It also contains a legend to identify what electrical components are part of which circuit



12V Isolator Switch

- Rotate the red rotary switch to the ON position to allow 12V loads to run. These load draw power directly from the battery system.
- Rotate the switch to the OFF position to isolate these loads, this will prevent power being drawn from the battery system.
- Rotate the switch a further ¼ turns past the OFF position to lockout the switch, it can be removed by pulling knob away from the panel for additional lockout isolation if desired.

Note: The batteries may still be charged, and inverter may still be used while the 12V isolator switch is in the OFF position.

LED rocker switches

- Switching into the up position will turn on the relative circuit and this will be indicated by a red LED light on the switch.

Mini Circuit Breakers

See DC Overload Protection

12VDC Overload Protection

High Load Primary Circuit Breakers (50A and above)

The primary/main 12Vdc circuit breakers will be within 1M of the battery bank. They may be accessed either externally through the battery storage bay or internally through an adjacent electrical bay depending on your caravan model. There will be 2 of these breakers present:

300A Breaker - This is the overcurrent protection for the battery bank.

200A Breaker - This is the over current protection for the INVCHR2 Inverter Charger

- These breakers are push-to-reset type. When opened/tripped a red lever will open at the bottom of the breaker. To reset push the lever back into the body of the breaker. *See Figures 12 & 13.*
- To manually open the breaker and isolate the circuit, push the red button.



Fig. 12

Breaker in normal state



Fig. 13

Tripped Breaker

Medium Load Secondary Circuit Breakers (10A-50A)

Providing overcurrent protection for directly connected DC appliances and the PV system, these breakers are typically located in the main electrical bay under the dinette seat or bed depending on your caravan model.

- These breakers are push-to-reset type. When opened/tripped, a small black pin on the end of the breaker will be extended out, *See Fig 14*, and will have small amount of resistance to being pressed in. When resetting listen for an audible *click* to confirm the breaker has been successfully reset.



Fig. 14

Mini Circuit Breakers

- Located on the Distribution Switchboard Control Panel
- Each breaker corresponds to a circuit per the legend on the panel. *See Wiring Plan – Distribution Switchboard*
- Breakers are push-to-reset type, when opened/tripped the button will be extended out, *see fig 15*, and will have small amount of resistance to being pressed in. When resetting listen for an audible *click* to confirm the breaker has been successfully reset.



Fig. 15

Single-use Blade Fuses (1A-30A)

- Located on the primary battery bank circuit breaker these fuses are housed with in-line holders and are used for constant power circuits (Stereo memory, Emergency Breakaway system, Trail-Assure Electronic Stability System) *See Figures. 16 & 17.*
- The AutoTerm Diesel heater also uses these fuses and are located mounted near the heater head unit.



Fig. 16



Fig. 17

PV (Solar) Single-use Ceramic Fuses (10-15A)

- Located underneath the solar panels these fuses are housed in MC4 connectors specifically used for PV systems. Each solar panel has its own fuse for overcurrent protection of the panel.
- To change the fuse push in the tabs on either side of the connector and pull apart the connector, this will allow the fuse cover to be unscrewed to reveal the fuse. Fuses do not have polarity and can be installed in either direction. *See Figures. 18 & 19.*



Fig. 18



Fig. 19

Note: Automotive Blade and Ceramic style fuses use a metal strip limiter rated to melt at a specific ampere rating, as the strip melts it creates a very high resistance that opens and protects the circuit. This is known as 'blowing' the fuse. This makes them a single-use item and will need to be replaced after the fuse is 'blown'. These fuses can be purchased from most automotive or electrical and online retailers.



CAUTION

Recently blown fuses can be hot enough to cause burns when touched. Allow time for the fuse and housing to cool before handling and discarding the fuse.

Lithium Battery System

Your RV is fitted with a dual 300Ah Lithium Iron Phosphate (LiFePO₄) battery system. Capable of providing a total storage capacity of 600Ah.



The factory-fitted charging systems are specifically designed to allow efficient charging, suited to the extreme power demands of the larger battery, and an internal Battery Management System (BMS), built right into the battery itself, constantly monitors the battery health including:

- Over & Under Voltage
- Over & Under Current
- Over & Under Temperature
- Resistance
- Short Circuit

Also fitted, is an external battery monitor display and smart shunt from Projecta, with Bluetooth connectivity, which allows you to manage and monitor your power usage. *See BM500-BT Smart Shunt and Battery Monitor.*

The battery bank is externally accessible via an offside wall access hatch.



BM500-BT Smart Shunt and Battery Monitor

All MDC caravans with Lithium batteries are factory fitted with a Projecta BM500-BT smart shunt and battery monitor that is fitted between the battery bank and the 12Vdc system via the negative pole connection. This is so the shunt can measure the actual voltage, current load coming to and from the battery system and determine an accurate battery State of Charge (SOC) and relay this data to a display screen located near the caravan entryway by data cable. It is also a smart device that can transmit this data via Bluetooth to a companion app on your smart device.



The BM500-BT when correctly configured and calibrated to the battery system will constantly monitor the system and can provide early warning alarms for critical events such as:

- Over and Under Voltage
- Charge and Discharge Over Current
- Low SOC
- Low Time remaining
- Low and High Temperature

Using the BM500-BT Display Screen

The display screen is located near the caravan entryway and is connected to constant power from the battery system and is always on. To reduce constant draw on the battery system by the LED screen the display will automatically turn off after 150 seconds of inactivity. Press any button on the display to wake it back up.

Pressing the centre scroll buttons will cycle through the various display values:

Display Value		Description
Time to go	Mins	Time left under the present load, before the batteries are empty. Or time left under the charge current, before the batteries are fully charged Note: 999 is the highest value
Voltage	V	Voltage of the battery system
Current	A	Current flowing in or out of the battery system
Percentage		Percentage value of the auxiliary battery system state of charge



FURTHER READING

The Voltage meter on the left-hand side of the display is designed for a connection to a starter battery where the BM500-BT is installed in an automobile. It is not used for caravan installations. For more information refer to the Projecta OEM documentation.

Connecting to the Projecta BM500-BT Companion App

The companion app is available on iOS and Android and can be downloaded via the following QR Codes:



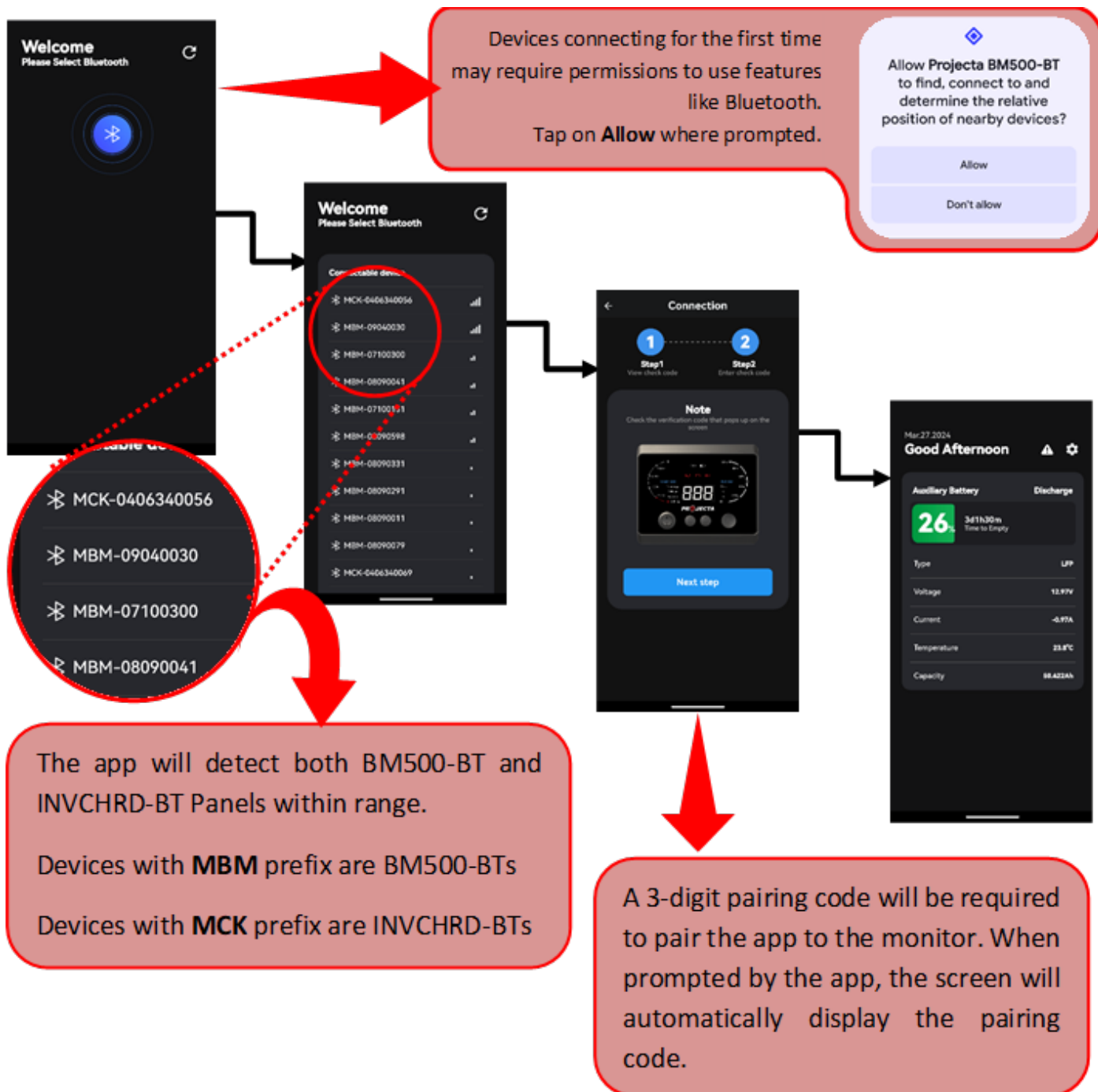
GET IT ON
Google Play



Download on the
App Store

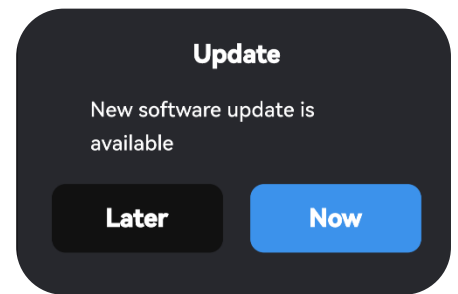


1. Once connected to power, the system will undergo a brief initialisation period while it starts up. Using a smart device with the Projecta BM500-BT application installed, open the app, and connect to the monitor. Following the on-screen instructions.

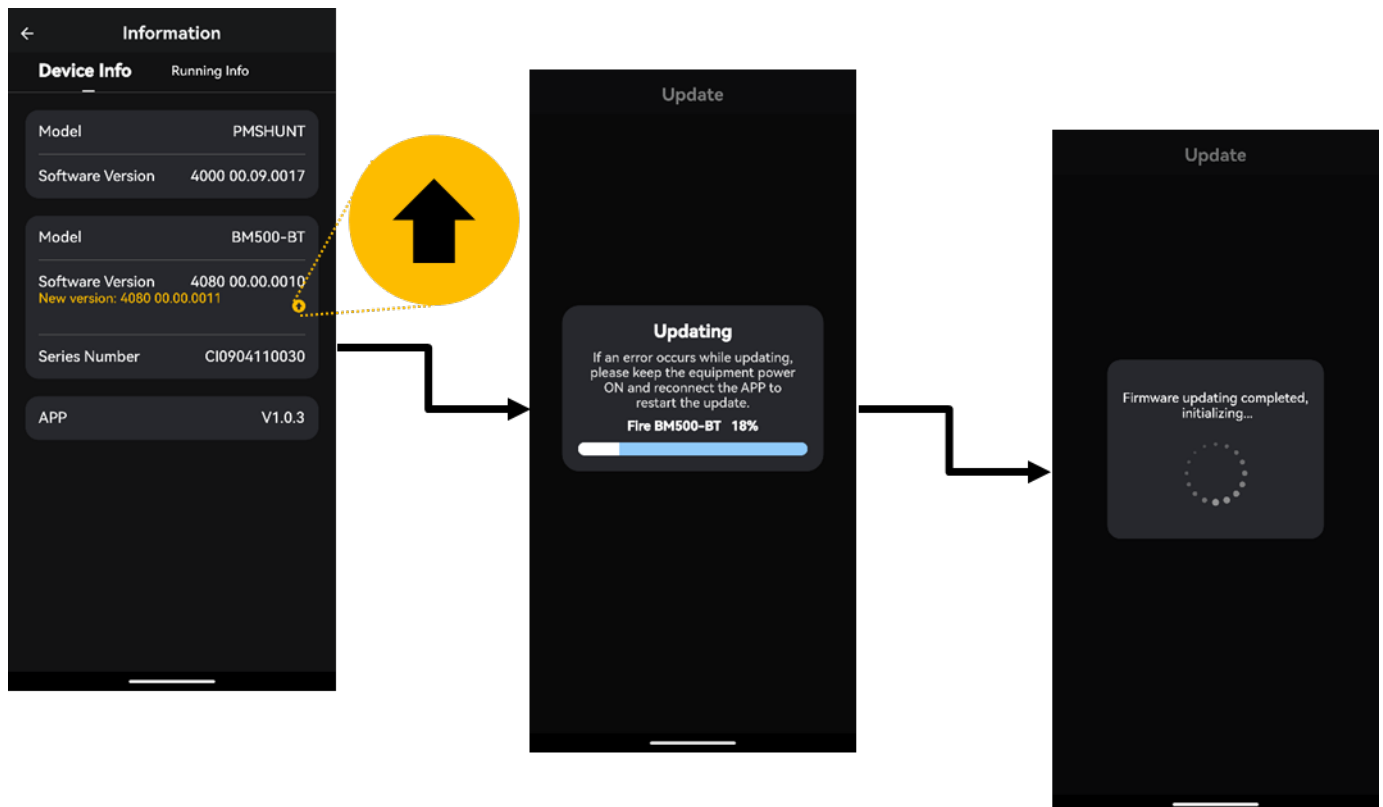


2. Ensure the PMSHUNT and BM500-BT software is up to date. The app may detect this automatically and prompt you to update. Selecting Now on the prompt will take you to the Information screen. If not prompted to update, navigate to this screen manually:

- a. Navigate to the settings screen.
- b. Tap the Information button.



If there is a yellow arrow next to any version numbers, tap on this and follow the prompts to automatically download, load and re-initialize the system. The app will automatically prompt you to reconnect to the system once complete.



FURTHER READING

For further information on navigating and using the companion app, please refer to the Projecta OEM documentation.

Configuring and calibrating the BM500-BT



NOTICE

It is essential for the BM500-BT to be correctly configured and calibrated to ensure the display and the app provide accurate information.

MDC fully configure and calibrate the BM500-BT during the manufacture of your caravan, however if the Shunt or batteries (single or both) are ever disconnected, replaced or the shunt is reset to OEM factory settings the BM500-BT will need to be reconfigured and recalibrated. This can be done completely via the app.

Configuration

1. At the home screen of the app once connected, tap on the cog symbol in the top right corner to enter the settings screen.
2. Ensure the settings are configured per *table 2*.

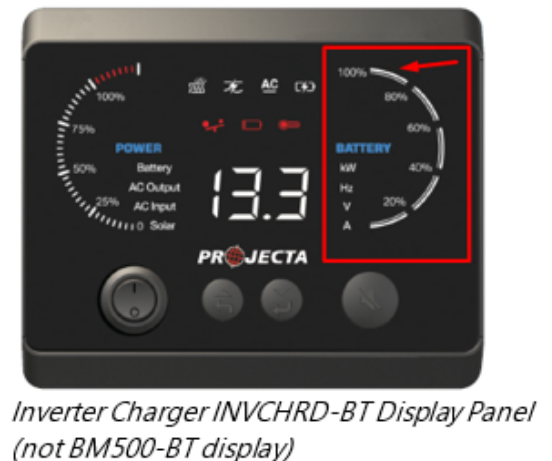
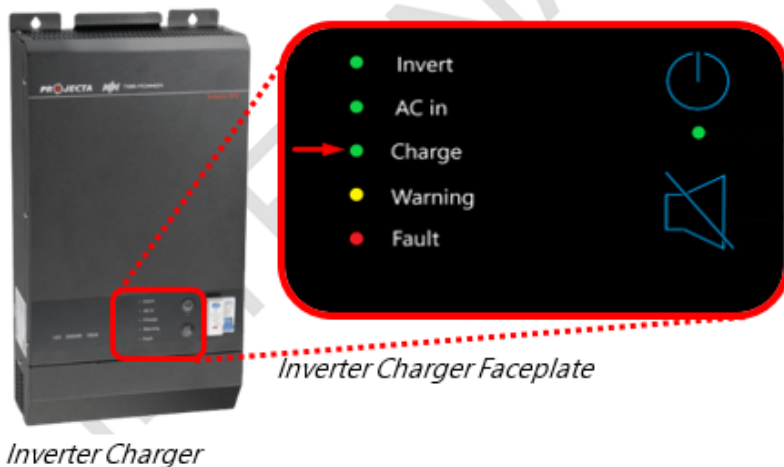
			Standard Setting for XT14E MKIII Models
Battery Type			LFP
Battery Capacity			600Ah
Battery Function			DISABLE
			Standard Setting for XT14E MKIII Models
Buzzer			ENABLED
1	Battery Voltage Low	Alarm or Protection Value:	11.5V
		Resume Value:	12.2V
2	Battery Voltage High	Alarm or Protection Value:	14.8V
		Resume Value:	14.6V
3	Battery SOC Low	Alarm or Protection Value:	20%
		Resume Value:	30%
4	Time To Go Low	Alarm or Protection Value:	15min
		Resume Value:	20min
5	Over-current (Charge)	Alarm or Protection Value:	200.5A
		Resume Value:	195.0A
6	Over-current (Discharge)	Alarm or Protection Value:	-300.5A
		Resume Value:	-290A
7	Battery Temperature Low	Alarm or Protection Value:	-20.0°C
		Resume Value:	-10.0°C
8	Battery Temperature High	Alarm or Protection Value:	50.0°C
		Resume Value:	49.0°C

Table 2

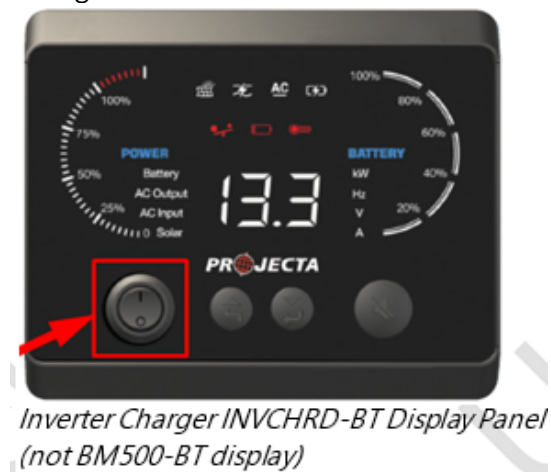
Calibration

1. Ensure the battery system is fully charged. *See Battery Charging.*

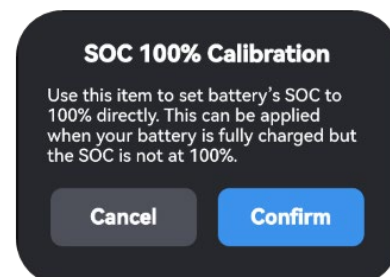
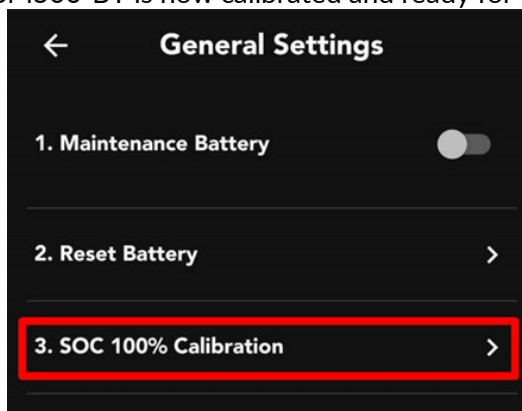
This is consistently identified by looking for the Green '● Fully Charged' LED light on the charger inverter faceplate or on the INVCHRD-BT display screen, the right-hand side SOC (state of charge) meter is solid (not flashing) at 100%.



2. Once the battery charger is reporting the battery bank as fully charged, ensure there are no loads or charge being applied to the battery bank:
 - a. Disconnect the RV from shore power.
 - b. Isolate the battery bank from all loads (Red rotary isolation switch)
 - c. Ensure the Inverter Charger is switched **OFF**.



3. In the mobile app, navigate to General Settings and tap on option 3. SOC 100% Calibration and tap confirm. The BM500-BT is now calibrated and ready for use.



Battery Charging

Charging from Shore Power

The factory fitted INVCHR2 inverter-charger has a 5-stage charging function when connected to 240Vac mains via the 15A inlet.

- Ensure the INVCHR2 is powered ON, this is done by the power switch on the INVCHRD-BT display panel located near the caravan entryway. *See Fig 20.*
- Once connected to power the charger will automatically begin charging the batteries.
- It will indicate when the batteries are fully charged when all 5 bars on the right-hand side of the display panel are solid and not flashing.



Fig 20

Charging from your Vehicle

All MDC caravans come factory fitted with a 12-pin trailer plug and 50A Anderson Powerpole plug accessible at the drawbar. To charge from your vehicle corresponding plugs should be fitted for connection. *See CHARGING THE CARAVAN for further details.*

- The factory fitted IDC25X DC-DC chargers are programmed to favour solar power input until the supply falls below a minimum threshold for the controller. By supplying power to the trigger wire through the #12 pin, the unit will switch mode to favour the supply via the auxiliary Anderson plug when the tow vehicle engine is running.
- Vehicles that have a “smart alternator” require the IDC25X’s to be activated via the trigger wire for the tow vehicle ECU to detect the charge requirement of an auxiliary battery.

Battery Care & Maintenance

Storage type batteries require periodical maintenance to perform at their peak and extend their service life. The following is an outline of how to gain the best performance and lifecycle from the LiFePRO+ batteries fitted in your RV:

- Always use a quality charger that caters to the voltage requirements of a LiFePO₄ battery.
- Never leave your battery stored at low voltage. Before storing your RV ensure that the battery is fully charged, or at least 50% charge, and all power is disconnected/switched off.
- Always ensure that, when in storage, the voltage does not drop below 50% charge.
- When possible, leave the battery connected to a smart charger that will cycle and maintain the battery during storage. Such as the factory fitted, 5-stage charger. If this is not possible check and charge at regular intervals to prevent excessive discharge.
- Never connect unregulated solar power directly to your batteries.

For further information regarding your lithium battery, refer to the LiFePRO+ website (www.lifeprolithium.com.au)



A CONNECTABLE ELECTRICAL INSTALLATION BATTERY SHALL ONLY BE REPLACED BY ONE OF THE SAME TYPE AND SPECIFICATION AS THAT ORIGINALLY FITTED. UPGRADES TO THE BATTERY OR SYSTEM SHALL ONLY BE PERFORMED BY A COMPETENT PERSON.

Lithium (LiFePO₄) Battery Reset

LiFePRO+ batteries are equipped with an internal battery management system (BMS) to protect the battery from conditions such as overcharge, over-discharge, and short circuits.

In the event, the internal BMS is triggered (e.g., the battery goes flat), the 12V system will shut down for a brief period and connected display screens may show no voltage during this time. To reset the BMS and recharge the battery, follow these steps:

(A) MAINS POWER AVAILABLE:

1. Turn off all loads.
2. Connect your Caravan to 240Vac mains power and switch it on – this will start the INVCHR2 Battery Charger.
3. Confirm the right-hand side of the display screen light show one or more flashing bars; and
4. Charge battery for at least one hour before turning DC loads back on.

(C) NO MAINS POWER AVAILABLE

1. Connect the trailer plug and Anderson plug to the running tow vehicle.
2. Change the mode on both or either IDC25X DC to DC controller to Override Output mode by holding and pressing the Mode button on the charger for about 10 seconds. When all Battery Type LEDS light up simultaneously, let go of the Mode Button. This will cause IDC25X to commence charging.
3. Charge for at least 15min* before changing back to lithium mode.

**After 10 – 15 minutes with no DC loads applied, the BMS shutoff inside the battery may disengage, and a voltage reading will appear on the PROJECTA display. In this case, follow the steps outlined in the procedure (A) as soon as Mains power is available.*

Use of Appliances



CAUTION

Always check the input requirements for any appliance before use!

- All normal household appliances operable from a 10A socket may be used when connected to mains power. This includes portable induction cookers, jugs for boiling water, electric fry pans and coffee making appliances.
- Sensitive electronics such as chargers, laptops, C-Pap machines are permissible.

Projecta INVCHR2 – 12V 2000W pure sine wave Inverter Charger:

Mobile Phone Charger 5-30W	✓	Laptop 60-250W	✓
Digital Camera 4-19W	✓	Video Game Console	✓
Camcorder 10-30W	✓	TV	✓
Portable Stereo 4-50W	✓	Printer 100-160W	✓
Hand-Held Game Console 20W	✓	PC 200-400W	✓
Fan 30-60W	✓	Small Fridge 250-300W	✓
Small Power Tools 300-500W	✓	Halogen Light 500W	✓
RV Air Conditioner 2000W	✓	Electric Blanket 100-150W	✓
Induction Cooktop 1300-2000W	✓	Coffee Machine 2000W	✓
Microwave 900-2000W	✓	C-Pap Machine	✓
Fan Heater 2000W	✓	Washing Machine 500-1400W	✓

12V DC Outlets:

12v Kettle 150W	✓	12V cooker 10-15 Amps	✓
Small fridge 150W	✓	12V Portable Oven 130W	✓
12V sandwich/Jaffle Maker	✗	Portable Diesel Heater	✗
12V Washing Machine	✗		

USB Outlets:

- Phone and tablet charging only.

INVCHR2 Inverter-Charger



CAUTION

- High Voltages inside
- The appliance is not to be used by persons (including children) with reduced physical, sensory, or mental capability, or lack of experience and knowledge, unless they have been given supervision of instruction.
- Children being supervised not to play with the appliance.
- This device can only charge 12V batteries: -
INVCHR2 can charge:
 - 12V Lead acid batteries from 100~2400Ah.
 - 12V Lithium batteries from 100~1200Ah



CAUTION

- THE HIGH LOAD PRIMARY CIRCUIT BREAKER MUST BE TURNED OFF BEFORE SERVICING
- MUST ONLY BE SERVICED BY QUALIFIED ELECTRICIAN

INVCHR2 General Safety Instruction

As dangerous voltages and high temperature exist within the Inverter Charger, only qualified and authorized maintenance personnel are permitted to open and repair it. Please make sure Inverter Charger is turned off before opening and repairing it.

This manual contains information concerning the installation and operation of the Inverter Charger.

All relevant parts of the manual should be read prior to commencing the installation.

Please follow all local laws and regulations. Any misuse of the product according to the manual will not be covered by warranty.

General precaution

- DO NOT expose to dust, rain, snow or liquids of any type, the inverter is designed for indoor use. DO NOT block off ventilation, otherwise the Inverter Charger could overheat.
- DO NOT put any flammable goods near to inverter.
- NEVER place unit directly above lead acid batteries, gases from a battery will corrode and damage Inverter Charger.
- DO NOT place battery on top of Inverter Charger.

Precaution regarding battery operation.

- If battery acid contacts your skin, use plenty of water wash the acid off. If acid goes on your clothes remove these clothes. If irritation to the skin occurs, see medical advice.
- Lead Acid batteries may generate flammable gas during charging. NEVER smoke or allow a spark or flame in vicinity of battery.
- DO NOT place metal tools on the battery, a spark may occur, and a short circuit might lead to explosion.
- REMOVE all personal metal items such as rings, bracelets, necklaces, and watches while working with batteries. Batteries can cause short-circuit current high enough to make metal melt and could cause severe burns.

General Description

The INVCHR2 is a 2-in-1 inverter chargers designed for high power management applications such as RV, utility vehicles, marine and emergency.

With the rapid charging capability of lithium batteries, the Inverter Chargers can provide high current charging from shore power and can start and powering the most demanding appliances, such as air conditioning, water pumps, washing machine, freezer, compressor, power tools and induction cooktops.

The inverter charger is fitted with an AC transfer switch which manages the AC power automatically switching between shore power and inverter power.

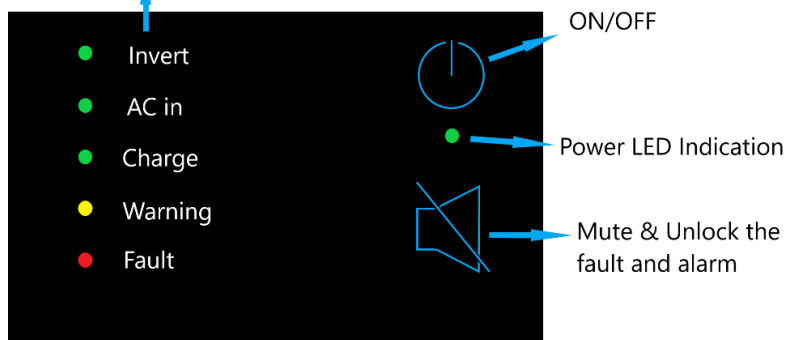
With Grid Boost feature, INVCHR2 can work with a limited AC source such as a generator or restricted AC mains to provide an additional boost using battery power.

INVCHR2 Control Panel

Located behind the external access hatch on the offside of the caravan.



Mode LED Indication



LED LEGEND	
LED	Function
Invert	It will illuminate when the unit is inverting.
AC In	It will flash when the unit detect any input, mains, or generator.
Charge	It will flash when the unit is in float charging. It will illuminate when the unit is in bulk or absorption charging.
Warning	It will flash when the unit has a warning.
Fault	It will flash when the unit has an error.

Inverter Charger Functions

Grid Boost

Grid Boost is a useful feature when limited grid supply is available or working with a generator. The Inverter Charger will disconnect the mains AC power providing power from the inverter and battery or boost this power using AC mains and the inverter / battery power. With this feature, you can avoid tripping a shore power circuit breaker or reduce generator capacity by up to 50%.

High performance pure sine wave

INVCHR2 is a pure sine wave inverters generating a near perfect waveform.

High surge power capability

Providing outstanding surge power capabilities, you can easily run heavy inductive loads like fridges, coffee makers, microwaves, power tools, air conditioning and induction cooktops.

Battery low voltage protect.

Inverter Charger provides configurable battery low voltage protection.

Lithium Battery Compatible

Projecta Inverter Chargers support a universal LFP charging profile and is provided by MDC with a pre-defined LFP charging profile specifically optimized for LiFePRO+™ Lithium Batteries.

AC Transfer Switch

In case of poor AC shore power due to poor voltage/ frequency or waveform characteristic, the Inverter Charger will switch to inverter and battery power.

In case of AC shore failure or exceeding the maximum AC input current set by the user, the Inverter Charger will initiate a quick switch to inverter, which will guarantee continuous power. When stable AC power is resumed, the inverter charger will switch back to AC shore power after a 5 second delay. Due to its ultra-quick transfer design, as quick as 0ms. The Inverter Charger could be used as a UPS.

Ground Relay

The neutral output of Inverter Charger is automatically connected to earth upon no external AC sources are available. Once external AC sources present, the ground relay will open. The Ground relay is required for the RCD to function correctly.

Protections and Safeguards

The INVCHR2 is equipped with a series of complete hardware and software protection functions to ensure its stable and reliable operation.

Overload Protection

When overload protection is trigger on, it will restart automatically after 60s. After three consecutive overload shutdown protections, the equipment will not restart automatically and will require a manual restart.

Over temperature protection

If the internal temperature becomes too high, the INVCHR2 will enter the over-temperature protection. After the internal temperature returns to normal, it can automatically resume normal operation.

Short circuit protection

The equipment will automatically shut down when the AC output is shorted and needs to be manually activated.

Battery over temperature protection During charging

The equipment will continuously monitor the battery temperature. When the battery temperature is too high, the equipment will automatically reduce the charging current. When the battery is hot the charger will automatically turn off to protect the battery.

Battery low voltage protection

To prevent the permanent damage caused by the over discharge of battery, the equipment will automatically cut off the output according to the low voltage protection point set by the user.

RCD (RCBO)

The Inverter Charger is fitted with an RCD (Safety Switch) to ensure maximum protection for our customers. The RCD is also fitted with an over current feature to protect wiring. If the RCD trips it will need to be manually reset.

See Residual Current Device (RCD) Safety Switches

INVCHR2 Operation

Make sure the battery voltage is within the permissible range before turning ON the breaker.

1. Turn on the circuit breaker between the battery and INVCHR2.
2. Turn on the switch on the INVCHRD-BT display panel. By default, the inverter function will be active.
3. Turn the switch off to turn the INVCHR2 off.



CAUTION

After the inverter power is turned OFF, there is still residual power and heat in the chassis, which may lead to electric shock.



FURTHER READING

For more information on Functions and Operation of the INVCHR2 please refer to the OEM documentation.

Using Air Conditioner with Inverter



NOTICE

DO NOT turn inverter off while air conditioner is running! Your Truma air Conditioner has a soft shut down feature for its protection. Turning off the power supply before allowing the air conditioner to complete its soft shut down may cause damage to the air conditioner.

INVCHR2-BT Bluetooth Display Screen

Allows users to monitor and control the INVCHR2. It can remotely switch on/off the INVCHR2. Displays battery voltage, current, inverter load percentage, AC input/output voltage, frequency, and power. Battery status can also be monitored via smart phone or tablet if connected with Bluetooth via the Projecta Inverter Charger companion app.

Using the INVCHR2-BT Display Screen

The display screen is located near the caravan entryway adjacent to the shore power RCD switch and is connected to constant power from the INVCHR2 when the INVCHR2 is on. By default, the display will always be on as long as the INVCHR2 is on. Press any button on the display to wake it back up.



Pressing the centre scroll buttons will cycle through the various display values:

Display Value		Description
Battery	V	Battery voltage
	A	Battery current*
AC Output	kW	AC output power
	Hz	AC output frequency
	V	AC output voltage
	A	AC output current
AC Input	kW	AC input power
	Hz	AC input frequency
	V	AC input voltage
	A	AC input current

**Battery current will not detect loads from the 12Vdc system as it does not directly communicate with the BM500-BT shunt. This display value will only display battery current going into the battery system from the INVCHR2 battery charger.*

Connecting to the Projecta INVCHRD-BT Companion App

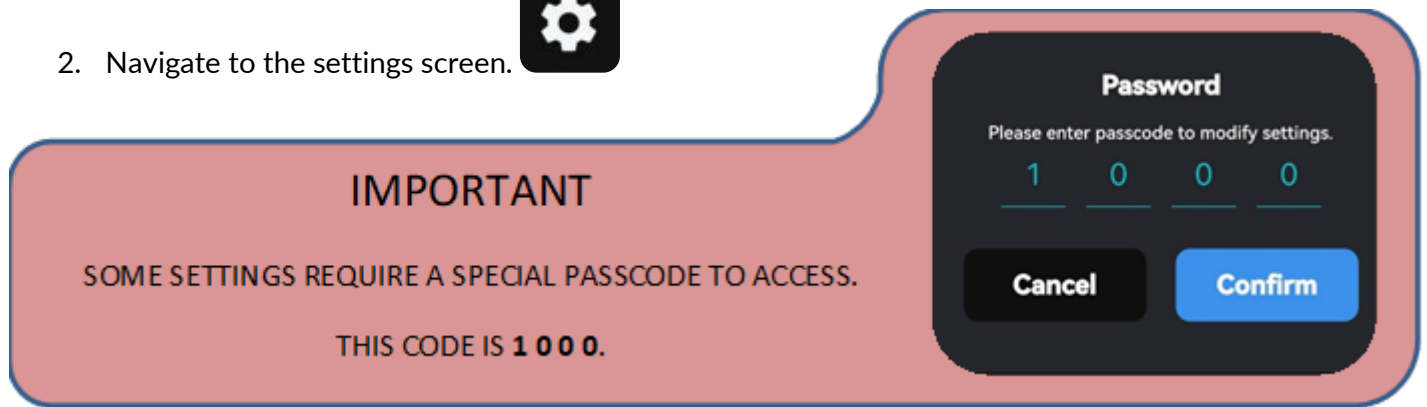
The companion app is available on iOS and Android and can be downloaded via the following QR Codes:



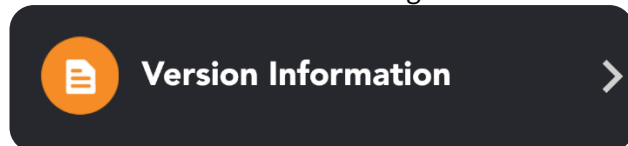
1. Once connected to power, the system will undergo a brief initialisation period while it starts up. Using a smart device with the *Inverter Charger* application installed, open the app and connect to the monitor. Following the on-screen instructions.



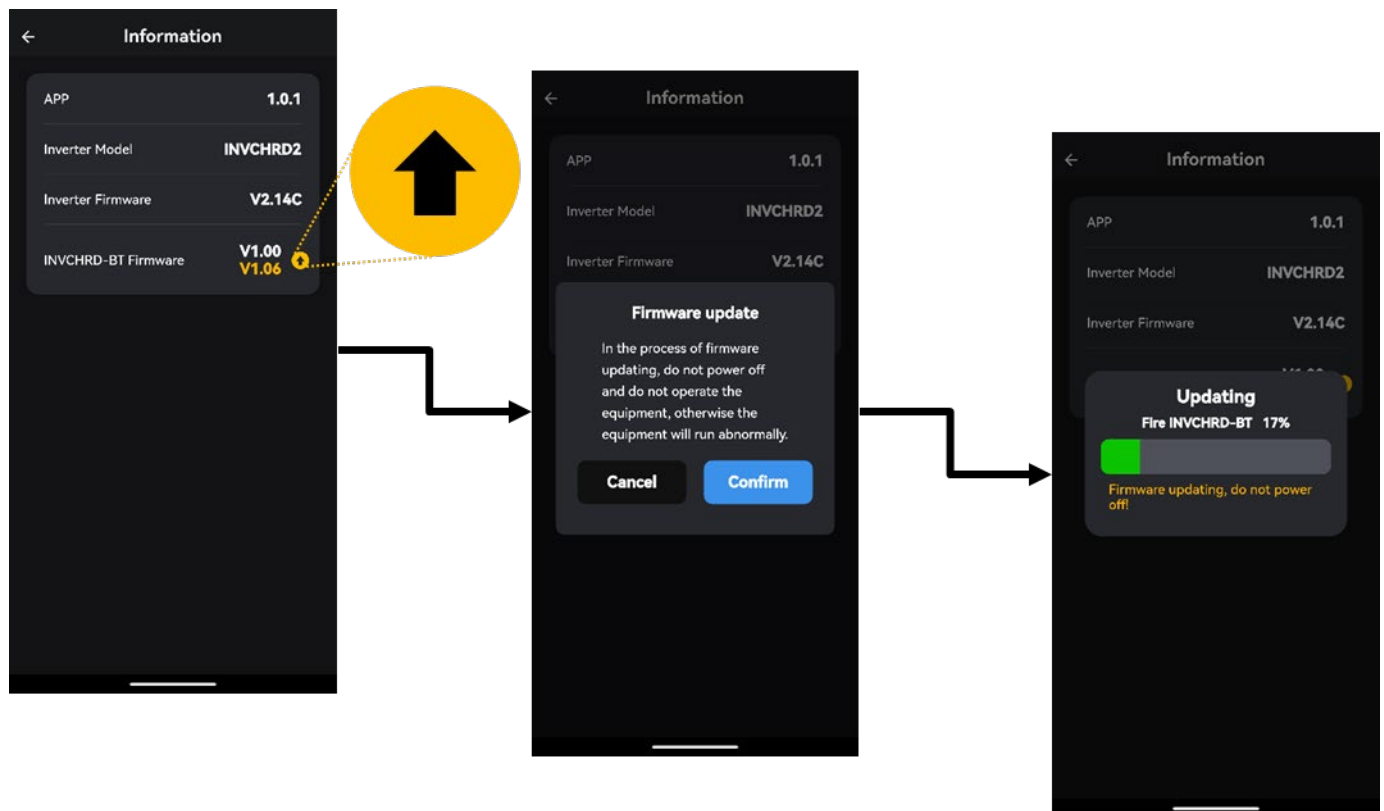
2. Navigate to the settings screen.



3. Ensure the Inverter-charger & INVCHRD-BT (Remote screen) firmware is up to date.



If there is a yellow arrow next to any of the version numbers, tap on this and follow the prompts to automatically download, load and reinitialize the system. The app will automatically reconnect to the system once complete.



Configuring the INVCHRD-BT



NOTICE

It is essential for the INVCHRD-BT to be correctly configured to ensure the display and the app provide accurate information.

MDC fully configure the INVCHRD-BT during the manufacture of your caravan, however if the INVCHR2 is ever replaced or is reset to OEM factory settings the INVCHRD-BT will need to be reconfigured. This can be done via a combination of the app and directly at the INVCHRD-BT display screen.

App Configuration

1. At the home screen of the app once connected, tap on the cog symbol in the top right corner to enter the settings screen.
2. Ensure the settings are configured per *Table 3*.



Standard Setting for XT14E MKIII Model

Battery Type		LFP
Battery Capacity		600Ah
Advanced Settings		
1	Max Charge Current	120
2	Low Voltage Protect Recover	12.2
3	Low Voltage Warning	12.0
4	Low Voltage Protect	11.5

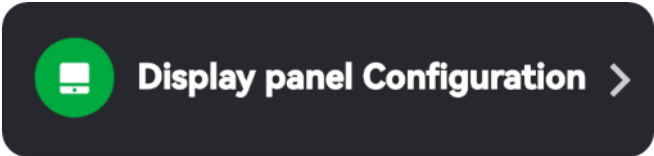
		Standard Setting for XT14E MKIII Model
1	Maximum AC Input Current	16
2	AC Wave Harmonic Adaption	NORMAL
3	AC Input Source	GRID
4	Detect Neutral and GND Voltage	DISABLE
		Standard Setting for XT14E MKIII Model
Beep Silent Mode		(Toggle) OFF

Table 3

Direct Display Configuration

To access the direct settings of the INVCHRD-BT, follow the below steps:



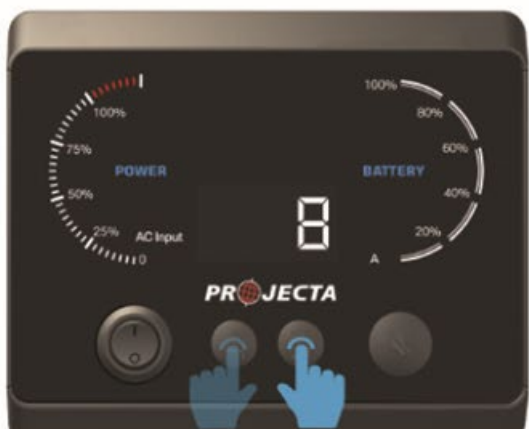
Step 1. To enter into the configuration: Press scroll down/confirm button for 2 seconds.



Step 2. Then you can use scroll up or scroll down button to choose the parameter you want to change.



Step 3. Long press the scroll down/confirm button for 2 seconds to trigger on the configuration, the number/icon will flash.



Step 4. Use scroll up or scroll down button to change the value.



Step 5. Afterwards, long press the scroll down/confirm button for 2 seconds to confirm the configuration. The two bars (load ratio and battery soc) will flash indicating the configuration is in process.



Step 6. After you have done all configuration you need, please press scroll up/return button for 2 seconds to exist configuration.

With the INVCHR2 powered ON. Ensure the settings are configured as per *Table 4*:

Standard Setting for XT14E MKIII Models	
Absorption Voltage	14.0
Float Voltage	13.5
Max Charge Current	120
Output Voltage	240
Output Frequency	50
AC Input Rating	16
Alarm Buzzer	ON
Enable SOC Display	ON
Enable Screen Off Function	OFF

Table 4



NOTICE

MDC works closely with Projecta engineers to determine the best settings for compatibility and optimization of the charging algorithm with LiFePRO+ Lithium batteries. It is strongly recommended not to deviate from the MDC factory specified settings in this document.



FURTHER READING

For more information on Functions and Operation of the INVCHRD-BT please refer to the OEM documentation.

Maximising Battery Use

There are ways to maximise the life of your batteries when off grid. It is important to have your vehicle wired correctly to charge whilst towing to your campsite.

Fridge Maximising

You can limit the power required by your refrigerator and freezer by following these steps:

- Pre-cool/freeze your food and water prior to departure. Freeze to the lowest possible temperature before packing into your travel fridge.
- Use frozen bottles of water to fill empty space in both the fridge and freezer sections. A full fridge is far more efficient so where possible, insert additional items or bottled water to replace items taken out.
- When driving and charging your caravan, lower the fridge temperature to take advantage of the power source.
- When camped, change your freezer temperature from minimum to around -6° to -8° Celsius and run the chiller section at 0° to 2° Celsius.
- Limit the number of times you open your fridge to prevent air exchange.
- Keep portable fridges in shade and ensure good air flow around the fridge.
- Use the Anderson plug connection in preference of the 12 volt plug. The Anderson plug connection makes better contact and reduces voltage loss.

Electrical Accessories

- If you're not using it, turn it off.
- Inverters are an inefficient source of 240 VAC power. If you can avoid using 240 volt appliances via the inverter you should.
- Appliances with heating elements such as kettles, coffee makers and heaters as well as items like microwave ovens will drain battery power very quickly when using the inverter. Avoid using them if you can and use the gas cooker for cooking and boiling water.

Lighting

- Turn off lights when not needed.

Heating

- The diesel heater is an efficient method of keeping your caravan warm and uses only small amounts of power. Always run at the minimum temperature setting required to keep the caravan warm and avoid switching off and restarting in short periods of time as shutdown and start up are when the heater uses it highest power requirement.

Solar Panels

- Keep solar panels clean and free of dust etc.
- Full sun will charge faster than shade. Parking in shade will reduce their capacity to recharge the battery.

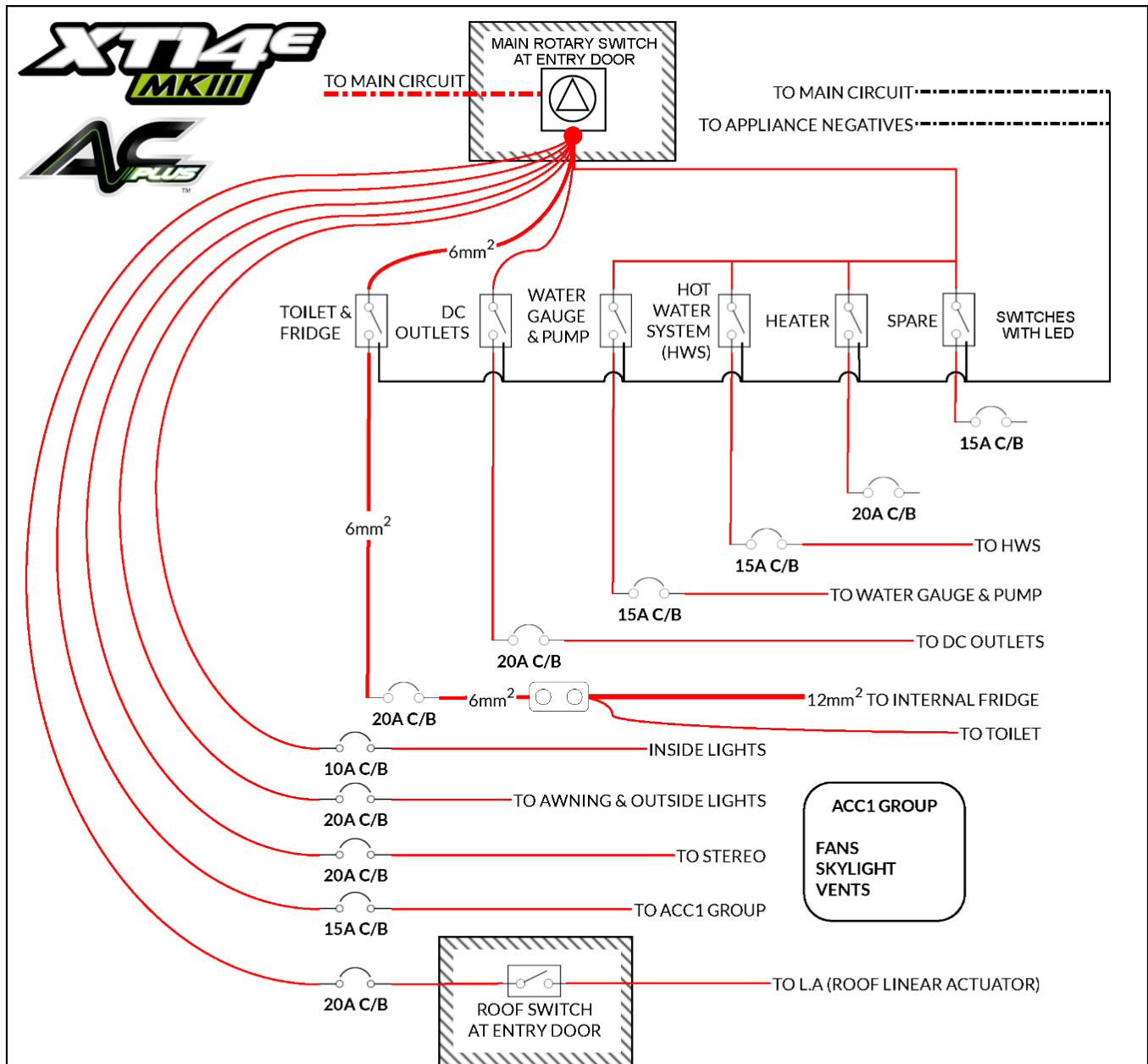
Generators

Generators are an excellent way to maximise off grid camping. Generally a good quality 2.2Kva generator will run the air conditioner and keep the caravan well charged.

Note: Not all camp sites allow generators, particularly National Parks. Always ensure that generators are permitted in the camping area before using.



12 Volt Switch Circuit



Wire Size Guide					
Application	Colour	Size (mm ²)	Application	Colour	Size (mm ²)
Stereo	BROWN	1.7	Exhaust Fan	ORANGE/WHITE	1
Awning	BLUE	1.7	Handle Light	RED/GREEN	1.7
Water pump & gauge	PINK/WHITE	2.5	Floor Light	BLACK/WHITE	1.7
Hot Water System	PURPLE/WHITE	2.5	Hatch Light	BLUE/WHITE	1.7
Sirocco Fan	PURPLE	1.7	Lights Power Line	GREY	2.5
DC outlets	BLUE/RED	6	Spot Lights	RED/BLACK	2.5
Diesel Heater	RED	6	Step Light	BLACK/RED	1.7
Toilet	YELLOW/WHITE	1.7	Ceiling Light	WHITE	1.7



VERSION 1_310524

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MDC XT14E MKIII DISTRIBUTION SWITCHBOARD CIRCUIT



Gas & Water Systems

Truma Rapid Hot Water System

Operating Instructions

General Safety

*Read the included Truma operation manual supplied with you trailer

The use of upright gas cylinders from which gas is taken in the gas phase is mandatory for the operation of gas regulators, gas equipment and gas systems. Gas cylinders from which gas is taken in the liquid phase (e. g. for forklifts) must not be used, since they would result in damage to the gas system. In the event of leaks in the gas system or if there is a smell of gas:

- extinguish all naked flames
- do not smoke
- switch off all appliances
- shut off the gas cylinder
- open the windows and doors
- do not actuate any electrical switches
- have the entire system checked by an expert!
- Repairs may only be carried out by an expert.
 - This device may be used by children aged 8 years or above and by persons with reduced physical, sensory, or mental capabilities or lack of experience and / or knowledge, only if they are supervised or have been given instruction with regard to the safe use of the device and have understood the potential risks. Children must not use the device as a toy.
 - To avoid the risk of accidental resetting of the over-temperature guard, the device may not be supplied with power via an external contactor, such as a timer, nor may it be connected to a power circuit that is regularly switched on or off via a device.

DANGER

Failure to operate the P&T safety valve (Fig. 1 - 4) at least once every six months may result in the water heater splitting. Continuous leakage of water from the valve may indicate a problem with the water heater!

- Water may drip from the discharge pipe of the P&T safety valve and this pipe must be left open to the atmosphere.
- The P&T safety valve is to be operated regularly to remove lime deposits and to ensure that it is not blocked.
- Any discharge pipe connected to the P&T safety valve is to be installed in a continuously downward direction and in a frost free ambient.
- Always remove the cowl cover prior to operating the water heater.
- Do not place articles on or against this appliance.
- Do not use or store flammable materials near this appliance.
- Do not spray aerosols in the vicinity of this appliance while it is in operation.
- Do not modify this appliance.
- Any modifications to the unit, including accessories and cowl, or the use of spare parts and accessories that are important to the operation of the system that are not original Truma parts and failure to follow the installation and operating instructions will void the warranty and release Truma from any liability claims. It also becomes illegal to use the appliance, and in some countries, this even makes it illegal to use the vehicle.
- Any work involving connection or interconnecting wiring must be carried out by a licensed electrician. If the mains cable (supply cord) is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Before accessing terminals, please ensure all supply circuits are disconnected (i.e. 230 V – 240 V and 12 V) and that the gas supply is securely turned off.

- The operating pressure for the gas supply is 2.75 kPa (AUS – Propane) and must correspond to the operating pressure of the appliance (see data plate).
- LPG systems and pressure regulators must comply with the technical and administrative regulations of the country in which the appliance is used. For your own safety it is absolutely necessary to have the complete gas installation regularly checked by an expert (at least every 2 years). The vehicle owner is always responsible for arranging the gas inspection.
- Do not operate when travelling.
- Do not operate the water heater when refueling the vehicle and when it is in the garage.
- Items sensitive to heat (e. g. spray cans) must not be stored in the installation area, since excess temperatures may occur there under certain circumstances.
- During the initial operation of a brand-new appliance (or after it has not been used for some time), an amount of fumes and a slight smell may be noticed for a short while.

Always observe the operating instructions prior to starting! The vehicle owner is responsible for correct operation of the appliance.

⚠ Before using the product for the first time, it is essential to flush the entire water supply through with clean warm water. Always mount the cowl cap when the water heater is not being operated! Drain the water heater if there is a risk of frost! Warranty claims will not be accepted for frost damage.

⚠ Always remove the cowl cover prior to operating the water heater.

If connecting to a central water supply (rural or city connection) or when using more powerful pumps, a pressure reducer must be used which prevents pressures of greater than 400 kPa occurring in the Truma UltraRapid.

Filling the Truma UltraRapid with Water

Check that the drain valve (3) and the P&T safety valve (Fig.2a - 4) in the cold water intake are closed.

- Close drain valve (Fig. 2 - 3). Lever in the “e” position (close).
- Test lever (Fig. 2a - 4a) of the pressure relief valve (4) must be in the “close” position.

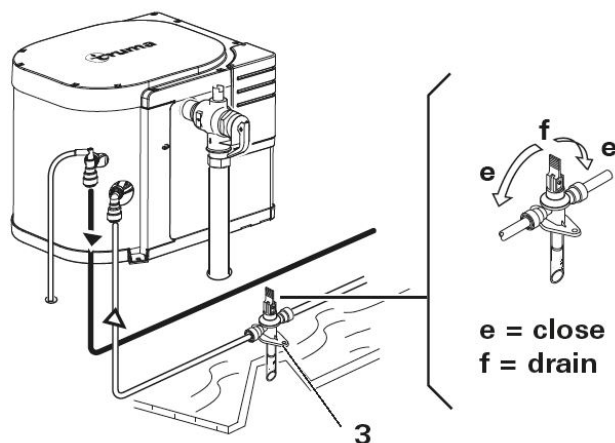


Fig. 2

- Open hot tap in bathroom or kitchen, with pre-selecting mixing taps or single-lever fittings set to “hot”.
- Switch on power for water pump (main switch or pump switch).
- Leave the tap open to let air escape while the water heater is filling. The heater is filled when water flows out of the tap.

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

- If just the cold-water system is being used, without water heater, the heater tank is also filled up with water. In order to avoid damage through frost, water must be drained by means of the drain valve, even if the heater has not been used. As an alternative, two shut-off valves, resistant to hot water, can be fitted in front of the cold and hot water connection.

Pressure and Temperature Relief Valve (P&T safety valve)

- Risk of scalding injury from hot water and/or tampering with the P&T safety valve!
- Do not actuate the P&T safety valve as long as the appliance is still hot.
- Do not place a plug or reducing coupling in the discharge pipe (Fig. 2a - 4b) of the P&T safety valve.
- Do not operate the water heater without a functioning P&T safety valve - this could cause an explosion.

The P&T safety valve (4) is a safety component and must not be removed for any reason other than replacement.

The P&T safety valve is not serviceable; if defective it must be replaced (failure to reuse an old P&T safety valve). It must be replaced by a certified service technician.

Tampering with the P&T safety valve will void the warranty.

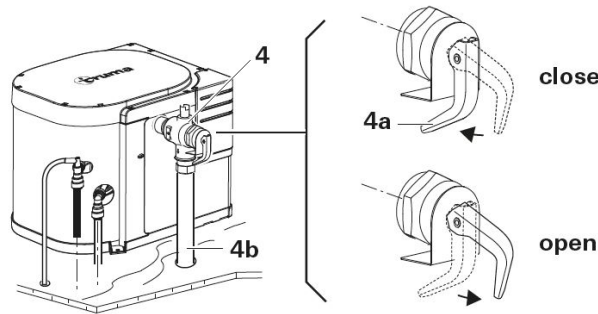


Fig. 2a

4 P&T safety valve

4a Test lever

4b Discharge pipe

Draining the Water Heater

- If the vehicle is not used during periods of frost, it is essential that the Truma UltraRapid be emptied.
- Disconnect power for water pump (main switch or pump switch).
- Allow the appliance to cool down.
- Open hot water taps in bathroom and kitchen.
- Open drain valve (Fig.2 - 3). Lever in the "f" position (drain). The water heater is now drained directly to the outside via the drain valve (3).
- Check that the water has been completely drained (14 litres).

Switching On Gas Operation

- ⚠ Never operate the heater without water in it!
- ⚠ If the wall cowl is positioned close to an opening window (or hatch) – in particular directly under it – the window must remain closed when the water heater is in use (see warning plate).

Removing The Cowl Cover

- Grab the handle of the cowl cover.
- Press the palm against the lid (Fig.3a - 1) while pulling the lid off the cowl (Fig.3a - 2).

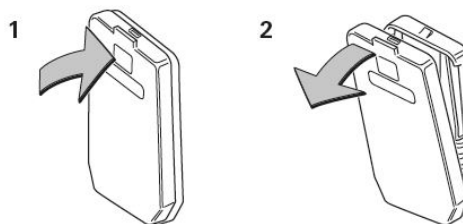


Fig. 3a

Select Water Heater Mode

Use the control panel to select the water heater mode



Fig. 3b

a = Red indicator lamp "Fault"

b = Water heater "On" 60 °C or 70 °C

c = Water heater "Off"

If there is air in the gas supply line, it may take up to a minute before the gas is available for combustion. If the appliance switches to "Fault" during this time, switch off the appliance – wait 10 minutes – and switch on again!

When using the vehicle switches

Refer to operating instructions of the vehicle manufacturer or see switch labels.

Switching Off Gas Operation

– Switch off the water heater to position (Fig. 3b - c).

If the water heater is not to be used for a longer period, mount cowl cover (non-observance of this point can lead to the function of the appliance being impaired through water, dirt or insects), close stop cock valve in the gas supply line and close the gas cylinder.

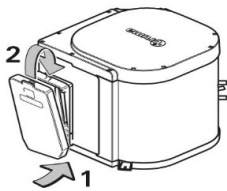


Fig. 4

Before setting off on any journey, fit cowl cap with the Truma UltraRapid switched off. Please ensure that it is secure and has locked into place (risk of accident). Defective cowl caps must not be used.

Drain the water heater if there is a risk of frost! Warranty claims will not be accepted if this is ignored.

Red Indicator Lamp "Fault"

The red indicator lamp (a) lights up if there is a fault. For possible causes please refer to "Fault finding" on page 6. To unlock, switch off the appliance, wait 10 minutes, and switch on again.

Maintenance

Do not modify this appliance

Servicing should only be carried out by authorised personnel.

Only original Truma parts may be used for maintenance and repair work!

Please contact the Service Australia for service and repairs.

Decalcification

The Truma UltraRapid must be descaled on a regular basis (at least twice a year).

We recommend the use of suitable normal commercial products for the cleaning, disinfection and care of the Truma UltraRapid. Products containing chlorine are unsuitable.

- In order to avoid the colonization of micro-organisms, heat up the Truma UltraRapid to 70 °C at regular intervals.
- The drain valve (Fig. 2 - 3) and the P&T safety valve (Fig. 2 - 4) are to be operated regularly to remove lime deposits and to ensure that they are not blocked. Frequency: every 6 month.

Fuses

The water heater 12 V fuse is on the PCB on the water heater.

Important note

Only replace the miniature fuse on the PCB with a fuse of the same type: 1.6 A (slow action).

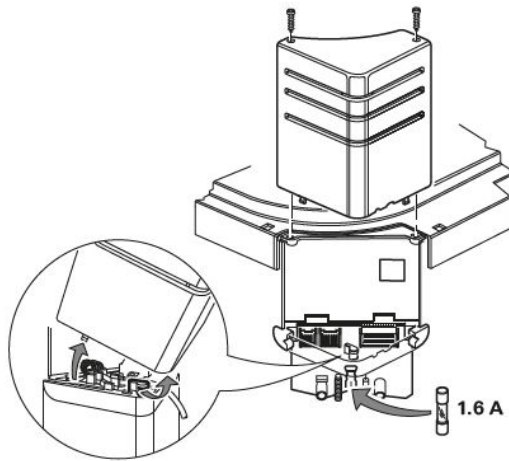


Fig. 6

Circuit Breaker

There is a circuit breaker allocated to the water heater circuit switch on the main electrical panel. To reset this breaker, push in.

Water Heater Trouble Shooting

Gas Operation

Symptom	Cause	Remedy
When switching on, the heater does not operate.	No 12 V DC supply voltage.	Check the power supply (operation voltage min. 10.5 V). Check the Truma UltraRapid fuse (refer to maintenance "Fuses").
When switching on, the heater does not operate, and the red lamp lights up after approx. 30 secs.	- Cowl cover fitted. - Air in the gas supply. - No gas supply. - Incorrect gas pressure.	Remove cowl cover and / or clear any obstruction. Check gas valves and gas cylinder. To unlock (and purge air), switch off the appliance, wait 5 minutes, and switch on again.
Heater operates for a prolonged time and then the red lamp lights up.	Excess temperature thermostat has responded.	Check water level, refill if required (close drain valve). To unlock, switch off the appliance, wait 5 minutes, and switch on again.

Water Supply

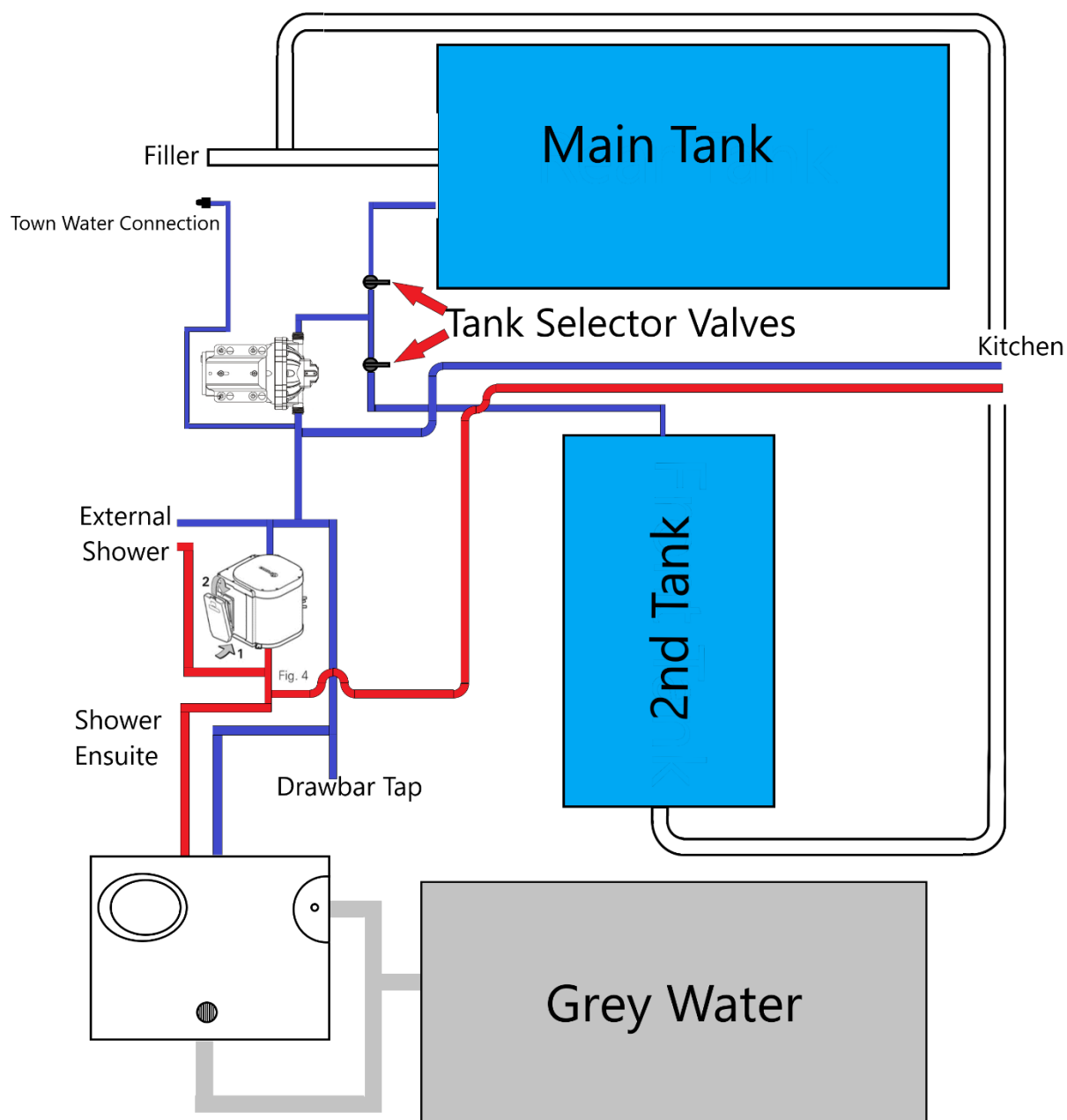
Symptom	Cause	Remedy
Water drips from the P&T safety valve.	- Water pressure too high. - Lime or dirt under the P&T safety valve seat.	Check water pressure (max. 400 kPa), use a pressure reducer when connected to central water supply. Allow the appliance to cool and then slowly raise the test lever (Fig. 2a – 4a) to flush the water system and attempt to force dirt or foreign matter out of the P&T safety valve seat. Replace P&T safety valve. This must be performed only by a certified service technician.
When opening the cold water tap, hot water comes out.	- Hot water flows back through the cold water supply.	-Fit a non-return valve in the cold water supply (refer to installation instructions "Water connection"). -Non return valve faulty

Water Pumps

The pump when switched on is activated by the release of pressure at the tap and will pump water continuously until the tap is turned off and pressure restored. Should the pumps activate while the taps is turned off this could indicate a leak and require investigation and rectification.

Switching Supply Tanks

To switch between the supply tanks, locate the valved beneath the caravan underneath the driver's side near the hot water system.



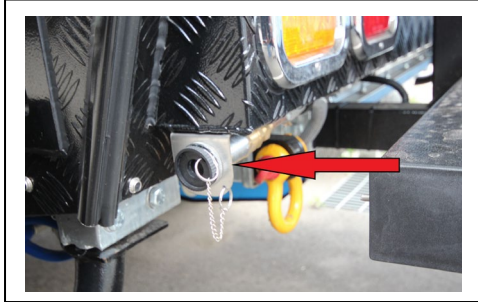
Connecting the Gas

WARNING: Your caravan is fitted with a gas detector. Check operation of the gas detector each time you use your caravan. Fig: 8

Your caravan is fitted with plumbed gas with the regulator and gas bottle placement at the front of the trailer. Always ensure gas bottles are serviceable and within the 10-year service life. This information is stamped on the bottle base.

Once you connect your gas bottle you can connect the external BBQ gas hose to the bayonet connection provided. Once the bayonet is secure, ensure all controls on the stove are in the "Off" position and then turn on the gas bottle valve. When the burner ignites hold the button down for 5 seconds then release.

NOTE: It will take up to a minute or so for the gas to purge the line and flow through the burners.



All gas appliances and supply must be turned off at the isolation valve when towing. Always turn off your gas bottle before towing your caravan. Never use gas appliances without adequate ventilation and always remove any gas flue covers before use.

Do not place items near or on any gas flue or exhaust as this may result in a fire or malfunction causing serious injury or death. Always keep a minimum of 500mm clearance from all flue's and exhausts.

Diesel Heater

AUTOTERM Air-2D Model



INFORMATION

Please read this manual before installing and/or operating the AIR heaters. This manual contains the necessary information to use this product correctly. Disregarding these instructions can void the warranty of the product, lead to damage to the product and/or property and be a risk to health.

General Instructions

- ***Always run the heater at maximum heat for 15 minutes on startup.***
- Heaters built-in fan draws air through the air intake opening. The air heated by the heater is channeled to cabins and desired spaces via outlet channels.
- Fuel is supplied by a separate fuel pump from the fuel tank of the vehicle or vessel or from an additional fuel tank.
- The heater can be powered by a battery of the vehicle or a separate battery.
- Temperature in rooms can be regulated by using a temperature sensor and a control panel, which sets heating parameters.
- When a temperature sensor is present (either built into the control panel or additionally installed), the heater is constantly comparing the actual temperature with the set temperature and automatically adjusts the heating capacity according to the heat demand.

A video tutorial of the Diesel heater functions is available on YouTube via the QR code below.



Safety Precautions



CAUTION

- Do not use or install the heater in places where flammable vapour or gases or substantial amounts of dust may form and accumulate.
- Disable the heater when the vehicle or vessel is being fueled.
- Do not cover the heater with clothing, pieces of fabric and so on, and do not place such objects in front of the air intake pipe or inlet and output of the heated air.
- Do not install the fuel line inside the cabin of a vehicle.
- The installation arrangement must exclude the possibility of contact of the exhaust pipe with the air intake, fuel pipe, or other flammable objects.
- The vehicle where the heater is installed must be equipped with a fire extinguisher.



CAUTION

- Disconnect the heater from its battery during repair works on the heater.
- Do not connect the heater to the power circuit of the caravan, when connected to shore power and there is no battery.
- Do not connect or disconnect connectors of the heater when the heater is powered.
- When electric welding is carried out on the vehicle, or repair work is done on the heater, the heater must be disconnected from the battery.
- Do not use fuses rated differently from indicated on the electric circuit diagram.
- Do not use makeshift devices (wires etc.) instead of fuses.



NOTICE

- Do not disconnect the heater from power before the purge cycle ends.
- When the heater has been switched off, do not switch it on again for 5-10 seconds.
- Do not step on the heater or put any objects on it and in it.
- Electric wiring, the air intake, and the fuel pipe must be protected from contact with sharp edges of vehicle structures.

Protecting from Mould

Mould is very difficult to clean once a porous surface is affected. There are several ways you can prevent the occurrence of mould on your caravan. Never leave your camper packed away wet. If you must leave a campsite with wet canvas or a damn interior, be sure to open and dry out your tent thoroughly at the very first opportunity when you get home. Mould can develop in just a couple of days so don't take the risk.

When packing up dry, it is important to check under the mattress that there is no build-up of condensation overnight. Body heat on a mattress can create enough temperature difference with the exterior for moisture to form under it. If left unchecked this can cause mould when your caravan is stored.



Useful Accessories

Levelling Blocks

These are excellent for levelling your trailer on set up. Stabiliser legs are not meant for correcting the trailer angle, they are there to keep it stable when people are in it. Using levelling blocks will extend the service life of the stabiliser legs and make set up much safer and faster. See below images.



Wheel Chocks

Wheel chocks are an important safety device when leaving your trailer parked on even the slightest incline. On level ground it is recommended to chock both sides of the wheel. On a hill you should chock the wheels on the downhill side ensuring the chocks



Covers

Hard floor campers and caravans will benefit greatly from a storage cover. Perishable fittings such as rubber seals and plastic will be protected from UV radiation. Paint and gelcoat finishes will oxidise less, and this will extend the service life of these finishes.

Stone Protection

There are proprietary devices available that assist in protecting your trailer from stones thrown up by the tow vehicle. Rock Tamer and Stone Stomper are two of the most commonly used.



Recovery Equipment

Recovery points

Your MDC caravan is factory fitted with receiving slots for bolt-in recovery points. Most models are also supplied with these recovery points fitted including 4.5t rated steel bow shackles. Do not attempt to recover via points that aren't designated recovery point. Your vehicle must be fitted with rated points that exceed the safe load of any recovery straps or tow straps being used.



Hardware

When towing your caravan offroad it is imperative that you are prepared for anything. Where it be the desert outback, beaches, or tropical rainforests even the most experienced adventurers can sometimes get 'stuck in the mud'. Having appropriate, quality recovery gear and knowing how to use it, can make the difference between a slight inconvenience and a timely, expensive remote recovery. Some key pieces of equipment recommended for any offroad escapes include:

- **Shackles** - Shackles are an integral part of any recovery kit, they are the key connecting point when securing a load and must be appropriately rated. There are 2 main types of recovery shackles commonly used.

- **Steel bow shackles.** Usually the most budget-friendly option, steel bow shackles are one piece steel loops secured by a hi-tensile steel bolt. Coming in many different colours and sizes, international standard requires the weight load rating to be embossed into the steel so be sure to pay close attention to this when selecting the best suited bow shackles for your kit.



- **Soft shackles,** pictured below, add a great deal of safety to any recovery situation as they are lightweight and made from soft, let surprisingly strong webbing and polyethylene rope. This can reduce

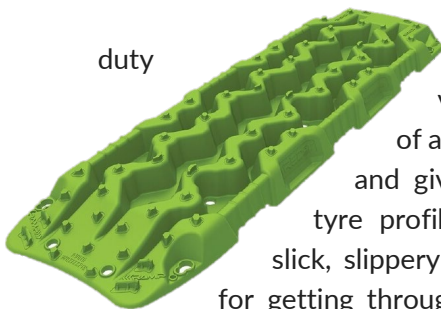


dangers of impact to persons and property damage in the event of equipment failure. Typically, more expensive than a traditional steel shackle, however, this technology has become much more available and affordable in recent years and has been quickly adopted by novice and expert adventurers alike as a staple piece of gear in recovery kits.

- **Snatch straps.** Typically manufactured from nylon webbing, these heavy-duty straps are designed for not only strength, by flexibility. Compared to traditional rope cording a snatch strap will stretch to a degree which helps to brace loads when high torque is needed, spreading the force out more evenly across the connecting gear and minimising damage in the event of equipment failure. The soft materials are also less damaging to the environment when snatching around tree trunks, compared to heavy chains. The added benefit of these simply being lighter to carry makes the investment in a good quality snatch strap worth the payload savings alone. Always be sure to check the rated weight load and look for the compliance tag to ensure you have a safe, correctly rated strap that will perform correctly.



duty



- **Recovery/traction boards.** A must-have for any off-roader, these heavy-plastic boards are designed to be able to take the weight of your caravan (or vehicle) to provide a portable source of arguably the most important resource of any off-road traversal, traction! These boards, when placed under the wheels lift

and give additional tread to the tyre profile allowing traversal over slick, slippery or unstable ground. Ideal for getting through mud, bogs, sand, snow and up wet or mossy cliff faces making for much faster recoveries. There are many different sizes, colours, and variety of recovery boards on the market so be sure to do your research and find what best suits your needs.

- **Shovels and high lift jacks** are extremely handy to have for recoveries. All MDC caravans come standard with



chassis mounted jacking points, so having a hi-lift jack can help get you out of a tough spot when you really need it.

- A **tyre gauge and air compressor/inflator** are another must-have to deflate (or inflate) your tyres to the correct pressure when travelling offroad. Depending on the terrain you are crossing, it may be necessary to deflate your tyres to a lower pressure to allow to better traction and handing of vibrations, such as corrugations or rocky beaches. Uneven inflation of tyres on the same axle can cause dangerous handling in your towing combination.
- **Tyre repair kits** are an excellent investment when travelling remote in the event you are unlucky enough to damage more tyres than you have spare. These dry repair kits are easy to use and can be used many times for minor damage such as punctures.



Trouble Shooting

12 Volt Electrical

PROBLEM	POSSIBLE CAUSE	REMEDY
No power	Main switch turned off	Turn on main rotary switch
	Tripped main circuit breaker	Reset CB1 circuit breaker located with battery (See trouble shooting diagram)
	Flat Battery	Battery needs reset: Charge battery on mains power and set charger to "Supply Mode" until voltage reaches greater than 5 volts then return to "Lithium" mode.
		Battery needs reset: If no mains power available jump start using another 12v battery to waken DC to DC controller and start solar panels charging.
Not charging from mains power.	RCD has tripped	Reset RCD protection on wall. AC/RCD1
	Charger not turned on	Ensure Inverter Charger is switched on
Not charging from solar	Tripped solar panel circuit breaker/s	Check DC/CB7 to 13 under seat, if black pin is protruding from end of breaker push back in to reset. (Diagram 1)
	Tripped DC to DC breaker	Check DC/CB 5 & 6. (Trouble Shooting Diagram)
Not charging from vehicle	DC to DC trigger wire not connected	See trailer plug wiring in this manual
	Tripped circuit breaker	Check DC/CB3 & 4 under the seat and reset if necessary (Trouble Shooting Diagram)
Circuit not working	Tripped circuit breaker	Check and reset the individual circuit breaker on the control panel

240 Volt Electrical

PROBLEM	POSSIBLE CAUSE	REMEDY
No power	Not connected to mains	Connect to mains power
	RCD unit has tripped	Reset the AC/RCD1 unit switch to up position
	RCBO on INVERCHAR	Reset AC/RCD2
	Site power supply tripped	Check RCD on site power
	10 amp converter tripped	Check your 10 amp converter
	Generator RCD tripped	Check and reset RCD on generator

Solar Charging		
Symptom	Possible Cause	Remedy
No solar power DC to DC solar light not showing	Tripped circuit breaker	Check/Reset circuit breakers DC/CB7 to 13 in Trouble Shooting Diagram
	DC to DC overloaded	Reset DC to DC by disconnecting from battery and solar input. See Projector user guide.
No solar power Dc to DC solar light showing	Tripped circuit breaker	Check/Reset circuit breaker DC/CB5 & 6 in Trouble Shooting Diagram
Weak solar charging (low voltage output)	Weak solar input due to shade	Move to sunnier area
	Weak solar due to dirty panels	Clean panels
	Incorrect setting	Ensure DC to DC is set to correct battery type
Solar charging not meeting demands	Power demands exceeding designed solar output	Add additional solar panels
		Reduce load

NOTES*

Expectations of a solar charging system need to be reasonable. Running two fridges without adding additional solar and following best practice with pre-cooling and packing will greatly reduce battery life and the ability of the solar panels to keep up with power needs.

Using inverters will very quickly diminish battery capacity.

Charging from Tow Vehicle		
Symptom	Possible Cause	Remedy
No charge Alternator light not showing on DC to DC	Tripped breaker	Check/Reset circuit breakers DC/CB3 & 4 in trouble shooting diagram
	Tripped breaker in car circuit	Check car circuit breaker/fuse
No charge, alternator, and solar light both on	Trigger wire for DC to DC unit not activated	Connect trigger wire for DC to DC to accessory power from car via trailer plug.
No charge DC to DC alternator lit	Tripped breaker	Check/Reset circuit breakers DC/CB5&6 in Trouble Shooting Diagram
	Trigger wire for DC to DC unit not activated for smart alternator	Connect trigger wire for DC to DC to accessory power from car via trailer plug.
Charging from Mains Power		
Symptom	Possible Cause	Remedy
No power to charger	Mains power not connected	Connect mains power
	Charger not plugged in	Plug in mains charger
	Charger not turned on	Turn on charger
	RCD tripped	Reset DC/RCD1
No charge with charger on	Tripped circuit breaker	Reset circuit breaker DC/CB2
If error code appears on the charger display refer to the Projecta user manual.		

Control Panel & Accessories		
Symptom	Possible Cause	Remedy
Control panel won't switch on	Flat batteries	Charge batteries
	Tripped circuit breaker	Reset circuit breaker DC/CB1
Accessory circuit not working	Tripped circuit breaker	Reset circuit breaker above circuit switch by pushing in. Listen for click.
Inverter not switching on	Tripped circuit breaker	Reset circuit breaker AC/RCD1



MDC XT14E MKIII

Resetting Breakers

There are primarily 3 types of breakers in MDC caravans and campers. The most obvious are the push to reset breakers on the control panel. These you simply push and if it resets you will hear a click.

High Load Breakers

These are for higher current loads such as CB1 and CB2 fig 1. To reset the small lever protruding from the side needs to be pushed back into the breaker body.



Fig. 2

Breaker in normal state

Tripped Breaker

Medium Load Breakers

When tripped, the small black pin on the end of the breaker will protrude. To reset, push the black pin back into the body of the breaker.

Fig. 3



Water

Problem	Possible Cause	Remedy
Pump not working (no noise)	No power from control panel	Check circuit breaker
	Flat Battery	Charge battery
	Faulty pressure switch	Replace pump, Contact dealer for replacement
	Bad electrical connection	Check connections with multimeter or test light
Pump working but no water flow	Airlock in water lines	Turn on tap and hold finger over nozzle for 5 seconds and release. Repeat several times. If this fails, fill water tank and use mains pressure to pressurize tank
	Water tank is empty	Fill water tank
	Kinked hose	Check hoses ensuring none are fouled
	Damaged / worn pump diaphragm	Repair or replace pump

Gas

Problem	Possible Cause	Remedy
Cooker not igniting	Gas bottle empty	Fill gas bottle
	Gas bottle not turned on	Turn on valve on gas bottle
	Gas hose on cooker not connected	Check bayonet is securely connected into receiver
	Regulator blocked	Check regulator is not blocked with dirt, wasps nests etc
	Kinked hose	Check hose is not twisted and kinked
Remember that first use after connecting gas will take a little while for the gas to purge the line to the cooktop. Hold the control knob down for up to 4 minutes		

Brakes

Problem	Possible Cause	Remedy
No Brakes	Open Circuits	Find and correct
	Severe under adjustments	Adjust brakes
	Faulty controller	Test and correct/replace
	Short circuits	Find and correct
Weak Brakes	Great or oil on linings or magnets	Clean or replace
	Corroded connection	Clean or replace connectors
	Worn lining or magnets	Replace
	Scored or grooved brake drums	Machine or replace
	Poor Synchronisation	Correct Controller setting
	Poor Brake adjustment	Adjust Brakes
	Glazed brake Linings	Re-burnish or replace linings
	Overloaded trailer	Correct loading. Check at weighbridge
Brakes Locking	Poor Synchronising with controller	Adjust controller
	Poor Adjustment	Adjust brakes as per instructions
	Faulty controller	Test and rectify or replace
	Loose, bent, or broken components	Inspect and replace components
	Out-of-round brake drums	Machine or replace
	Insufficient wheel load (dual Axle)	Correct trailer level to even load
Intermittent brakes	Faulty controller	Test and Correct
	Broken Wires	Repair or replace
	Loose connections	Find and repair
	Faulty ground	Find and repair

Handy Tips

Driving Off Road

Towing your caravan off road adds many dimensions to the driver's responsibilities and factors to be considered. When travelling remote always carry enough spare parts and supplies to cater for a "worst case scenario."

Always perform preventative maintenance and daily checks. Minimum trailer spares would consist of:

- Wheel Bearings
- Seals
- Wheel studs and nuts

When driving rough and corrugated road, it is best practice to take regular breaks. Constant and prolonged period on corrugations and rough tracks without a break are the prime cause of shock absorber and suspension bush failure. These items can become hot when subjected to long periods of hard work. On corrugated roads you should take regular breaks to allow the working parts to cool. Bushes are made from a thermoplastic and will soften and deteriorate quickly when abused. The same applies to shock absorber.

Wildlife

Australian outback roads are notorious for wandering stock and native wildlife which can be a serious danger to motorists. Due care must always be taken, and the possibility of an animal strike considered in regard to speed and time of day you are driving. Most animals in the outback are more active at night which greatly increases the likelihood of an animal strike between dusk and dawn. Towing a camper or caravan increases braking distance and has inherent risk associated with aggressive and defensive manoeuvring to avoid a collision.

Corrugations & rough road

Corrugations are arguably the most taxing and damaging road conditions to vehicles. Constant vibration can loosen vehicle components and as a stress dynamic to vehicles and drivers well in excess of normal road driving. In these conditions take regular breaks to reduce driver fatigue and fatigue to vehicles. Shock absorbers can become extremely hot on corrugated roads which can cause damage to seals resulting in shock absorber fade (reduction in damping effect) and in extreme cases failure of the seal completely. On rough and corrugated roads, it's important to adjust tyre pressures on your car and trailer to soften the effect and extend the contact patch of the tyre on the road.

Bulldust

This phenomenon is common on outback roads. Fine dust can settle in large holes obscuring them from unsuspecting drivers. It is important to reduce speed in these conditions and drive carefully to avoid the possibility of damage or an accident.

Sand

When driving on sand it is important to lower tyre pressures on both the vehicle and trailer. By lowering the pressure you will effectively create a larger footprint for the tyre which will reduce how far it sinks in sand. Sand shape and compaction will vary around the country so necessary reduction in tyre pressure will vary. Always keep in mind the lower the pressure the lower the speed you should travel. When lowering pressures to 20psi or less you also increase the chance of rolling the bead of the tyre off the rim so sharp turns should be avoided. When driving these conditions, it is strongly advised you carry a tyre pressure gauge/deflator and a portable compressor to reinflate when back on the highway.

Causeways

Outback roads often have causeways to control water runoff and prevent erosion of the road. When travelling at speed these causeways can be a danger to motorists and vehicles so due care should be taken to reduce speed when approaching them. In very remote areas these often won't have signposts so special care should be taken in these areas.

Creek and River Crossings



These crossings can be extremely dangerous even in low water levels and should never be attempted in times of even mild flooding. Towing a camper or caravan greatly elevates the risk in this situation and should never be attempted unless you are completely assured it is safe to do so. If there is any doubt about access in flood prone areas, you should contact the local authorities to find out conditions and dangers before you proceed.

Protecting the environment

Remote areas and National Parks are sensitive areas, and all precautions should be taken not to damage tracks, interfere with flora and fauna and not to contaminate the area. In sensitive areas it is advisable to use grey water tanks and contained toilets. If your camper or caravan isn't fitted with such, both toilets and grey water tanks are available as portable self-contained units. Always store food, food scraps and rubbish in secure containers, native animals can be quite resourceful in scavenging for scraps. Dingos have been known to open locked eskies to get to food so don't chance it, always secure these items when travelling.

Trip Planning

* When planning remote trips always consider where you will resupply for fuel, food and water. Some remote fuel stations may run out of fuel during busy periods or times when large fuel trucks are unable to access the area due to road conditions and closures or simply close outside of the season. Always check conditions and availability of fuel before setting out to remote areas.

Shire Councils

There are many resources available for planning your trip away. Every state has a tourism website as so regional councils which will give you extensive information on camping sites, things to do and see, events happening in the area and contact information for booking sites or activities.

National Parks

Each state's national parks organisation have a website to assist in finding campsites and provide specific information about each park's unique qualities. As a planning resource these are extremely good. All contact information will be available.

Wikicamps

This smartphone app is an excellent resource for finding all kinds of camping across Australia. If you are looking for free camping you won't find a better resource. There is an app add on that even assists in finding fuel stops with user updates on fuel prices.

Facebook

These days there are numerous Facebook groups dedicated to travelling with campers and caravans and also groups dedicated to travel in specific areas. The area specific groups have many locals as members and are a great way to find out local track closures, conditions, and research the area in general.

Warranty Statement

These Warranty Terms form part of the contract between you and Market Direct Group Pty Ltd (ACN 115 038 483) ("we" or "us") for the purchase of your new Off-road Caravan or Camper Trailer. Please read these Warranty Terms carefully. Should you have any questions relating to this Warranty, then please contact us.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

1. VALIDITY OF CLAIMS

- a) Claims under this Warranty may only be made by the original purchaser of the item in question. This Warranty commences on the original date of purchase and expires 12 months after that date, except with regard to the structural integrity of the draw-bar and chassis, for which this Warranty shall continue for the entire operational life of the Camper or Caravan.
- b) This Warranty only applies to items sold as "new" and does not extend to any items sold via auction, or labelled "factory seconds", "ex-demonstration" or "damaged", unless specifically stated otherwise by us in writing. (Please see further on this page for more information).
- c) This Warranty is an agreement between us and you personally and is not transferable under any circumstances. If an item is sold to a third party by the original purchaser, then this Warranty is terminated immediately for that item, and the original purchaser shall make no claims or be eligible for any claims on behalf of the new owner.
- d) This Warranty does not apply to new products purchased from us and then used in hire schemes or as rentals. Hiring or renting your products to third parties may negatively affect your ability to make claims for those products under any other warranties as may apply.
- e) This Warranty does not cover damage due to unauthorised modifications, misuse, abuse, incorrect assembly, improper or irregular maintenance, or accident or collision. Without limiting the generality of this clause, some examples of circumstances that may cause damage not covered by warranty include:
 - Failing to have your caravan or camper serviced at the frequency indicated in the manual for that product, or to perform regular basic maintenance as indicated in the manual;
 - Taking your caravan or camper through any environment or over any surface which the manual for that product indicates the product was not designed for. As an example, if you partially submerge the caravan, you will not be able to claim for resulting water damage;
 - The expected operational lifespan of your caravan assumes use as a holiday home, not as a primary residence. If you use your caravan as a primary residence, you will not be able to claim for the increased rate of wear and tear; and
 - Exceeding the load limits for your caravan or camper will cause strain on parts of the vehicle. The advertised load limits are for a load distributed roughly evenly across the caravan, and you may overload the caravan at lesser weights if the weight is disproportionately placed in one part of the caravan. You may not be able to claim for any failure or resulting damage caused or contributed to by such overloading.
- f) If we approve a warranty claim, then the work performed to remedy that claim must be performed either by us or by a person whom we approve in writing to do that work. If you have rectification works performed by an unapproved third party, whether under an approved warranty claim or otherwise, then we may not be responsible for the costs of those works, and this Warranty shall not cover those works, or any damage or loss of value arising from those works.
- g) Any affiliates, representatives, associates, agents, suppliers, resellers or similar of ours have no authority to approve or deny warranty claims on behalf of us.
- h) We shall not be liable, (in part or whole) for any warranties, either express or implied, made by agents or resellers unless we give an express written agreement to be bound by such a warranty, and such liability shall be strictly limited to the extent of that written agreement. Such unauthorised claims shall be the responsibility of the agent or reseller only.



2. REMEDIES AND LIMITATION OF LIABILITY

- a) Except as otherwise required by law, your remedy if we accept a warranty claim will be limited to our choice between repair works with our chosen repairer, replacement goods, or a refund, as we reasonably consider appropriate to rectify the basis of the claim.
- b) If we accept a warranty claim arising from a major failure, or for which we cannot provide a remedy in a reasonable time, then you may be entitled to a refund for that product. You will not be entitled to a refund or a replacement if the product has become damaged while within your care, unless that damage is limited to fair wear and tear and damage caused by a defect and not contributed to by your actions or neglect.
- c) You agree that, to the greatest extent permitted by law, we shall not be liable for consequential or special damages of any kind, including aggravated, punitive, or exemplary damages. Without limiting the generality of this clause, you agree that our liability shall be limited in all cases to the amount you paid for the products underlying a claim.

3. ITEMS NOT COVERED UNDER THIS WARRANTY

This Warranty does not cover damage of the following kinds or to the following products or parts of products:

- a) Rust
- b) Wheels and Tyres
- c) Paint
- d) Travel Covers and Straps
- e) General consumables (eg bearings, light bulbs etc)
- f) Zips and mesh or screens.

While these items are not covered under this Warranty, they may be covered by other warranties you have in respect of the product. This Warranty expressly applies to Tents for the general 12 Month term, including our canvas components, poles, and fittings. The Warranty for tents is subject to the same limitations as other parts of the caravan.

4. FACTORY SECONDS, EX-DEMONSTRATION AND DAMAGED GOODS

- a) From time to time, we may offer for sale items marked as “factory seconds”, “ex-demonstration”, or “damaged”. This Warranty does not apply to any goods sold under these markings.
- b) If other warranties apply to goods sold while marked as “factory seconds”, “ex-demonstration”, or “damaged”, then those warranties will apply the standard for a product with those markings, which will be a lower standard than that for a product sold as new. If you purchase a product with these markings, you acknowledge that the reduced price for the product reflects that some claims will not be available which would have been for a product marked as new.
- c) Any items sold as “factory seconds”, “ex-demonstration” or “damaged” items are sold on an “as is” basis. Due to the nature of such items, i.e being “ex-demonstration”, “factory seconds” or “damaged”, it is reasonable to expect that some imperfections or flaws may exist even where it is not initially apparent. While we will notify you of any defects or damage to such goods of which we are aware, you purchase the goods on notice that we may not be aware of all such defects and damage, and that the price you pay for the goods includes a discount to allow for the risk of you discovering further defects or damage.
- d) We do not make any representations as to the quality or fitness of any goods sold on these bases, and it is a term of the contract for the purchase of any such goods that the customer has made their own enquiries and inspections and relies exclusively upon those enquiries and inspections in deciding to make that purchase.

5. GOODS BOUGHT AT AUCTION

From time to time, we may, at our discretion, offer items for auction, either independently or via a third party. Whilst every effort will be made to provide all relevant information regarding the item on auction, as per Australian law, goods bought at auction are not covered by this Warranty and are not covered by the majority of consumer guarantees under the Australian Consumer Law. You may not have any rights to make a warranty claim for products purchased at auction.



6. LODGING A CLAIM

If you purchased a caravan or camper which you believe is covered by warranty, and you become aware of something you believe to be a defect or damage resulting from a defect, then you should follow the process set out below to obtain the fastest response and greatest chance of having your claim approved:

- a) As soon as reasonably possible after becoming aware of what you believe to be a defect or damage caused by a defect, lodge a warranty claim through our website using our online Warranty Claim Form;
- b) Once we receive a warranty claim form, we will respond in one of three ways. We will either accept the claim, reject the claim, or ask for further information to allow us to decide whether to accept or reject the claim. If a claim consists of multiple parts, we may give different responses to different parts.
 - If we accept a claim, we will notify you of the acceptance, and discuss with you how to remedy the claim. While we endeavour to accommodate your preferences in this process, we will generally provide our choice between repair works with our chosen repairer to the standard we deem reasonably remedies the accepted claim, replacement goods, or a refund, unless we accept that the claim is for a major failure;
 - If we reject a claim, we will notify you of the rejection and explain the reasons for the rejection. You may provide us with further information or explanations to appeal the rejection, but providing us with further material may not change the result; or
 - If we have insufficient information to either accept or reject a claim, we will ask you to provide us with more information to allow us to make that decision. We may require any kind of information which we consider to be relevant to the decision, which may involve questions about the use of the products, photographs of the products, or about the maintenance history of the products. If you fail, neglect, or refuse to provide us with information which we reasonably require to process your claim, we may reject the claim on the basis of that lack of information. that basis, even if you subsequently correct the information. If you are unsure whether information is relevant, include it in your application and we will assess its relevance.
- c) If you act or fail to act in a way which either prevents us from determining the true cause and extent of the subject of a claim, or which substantially constrains or limits our capacity to provide a remedy, this will adversely affect the handling of your claim. As examples of such conduct:
 - If you arrange for repair works before we can assess a product, we may not be able to determine whether the repair works were covered by a warranty, or may not be able to provide the appropriate remedy after those works;
 - If you do not notify us of a claimable matter without delay, we will not be liable for damage caused by the delay, and we may not be able to determine the initial cause of the damage once time has aggravated it; and
 - If you refuse to allow us to access the product for the purposes of assessing a claim, we may reject the claim on the basis that we have insufficient information.
- d) If you provide us with false, misleading, or selectively incomplete information, we may reject that application on that basis, even if you subsequently correct the information. If you are unsure whether information is relevant, include it in your application and we will assess its relevance.

7. CONTACT

If you have any further questions relating to warranties, or are unsure about any aspect of this section, then please

contact us. Phone: 1300 494 494 (Option 4).



Travel Record

Your caravan service record booklet and logbook will help you keep track of kilometres travels and service records.

[illegible]

Spare Part Numbers

Hub & Suspension Components

Timken Bearing (inner & outer bearings)	25590
Bearing Cone (Inner and outer bearings)	25520
Bearing Seal	55 x 85 x 12mm
Square Poly Orange Bush	YJJJ016
Steel Bush Insert 30 x 114mm	YZCN002
Adjuster Cam	YDS030
LHS Backing plate Assemble (with pads)	DM00025
RHS Backing Plate Assembly (With Pads)	MJFCX003
Crown Nut M38	LGPJ002
14mm Wheel Stud	YHJL110
14mm Wheel Nut	YZCQ029
½" UNF Wheel Stud	YZCQ009
1/2" UNF Wheel Nut	YZCQ007
Grease Nipple	6mm

Suspension

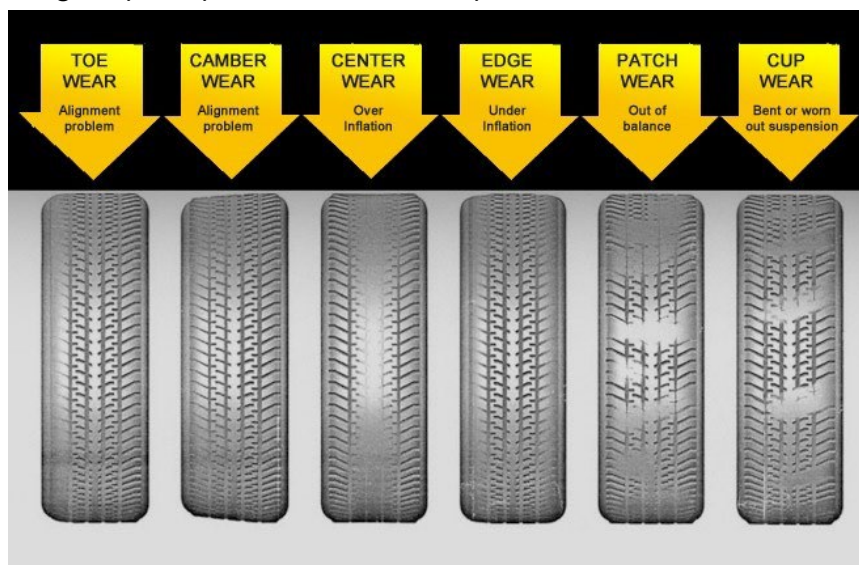
Your camper is fitted with quality independent trailing arm suspension with dual shock absorbers. This design is ideal for the full range of use on and off road however, common sense and mechanical sympathy must be shown in extreme terrains. Suspension maintenance should be done as per the schedule contained in this booklet. Regular lubrication and inspection are critical, and the grease points are indicated below. Regular checks of the torque on the trailing arm bolts indicated will prolong correct wheel alignment.

Trailing arm suspension should not be reversed up gutters and obstructions in a heavy manner. Always use a ramp or similar if you are backing over high gutters and obstacles.

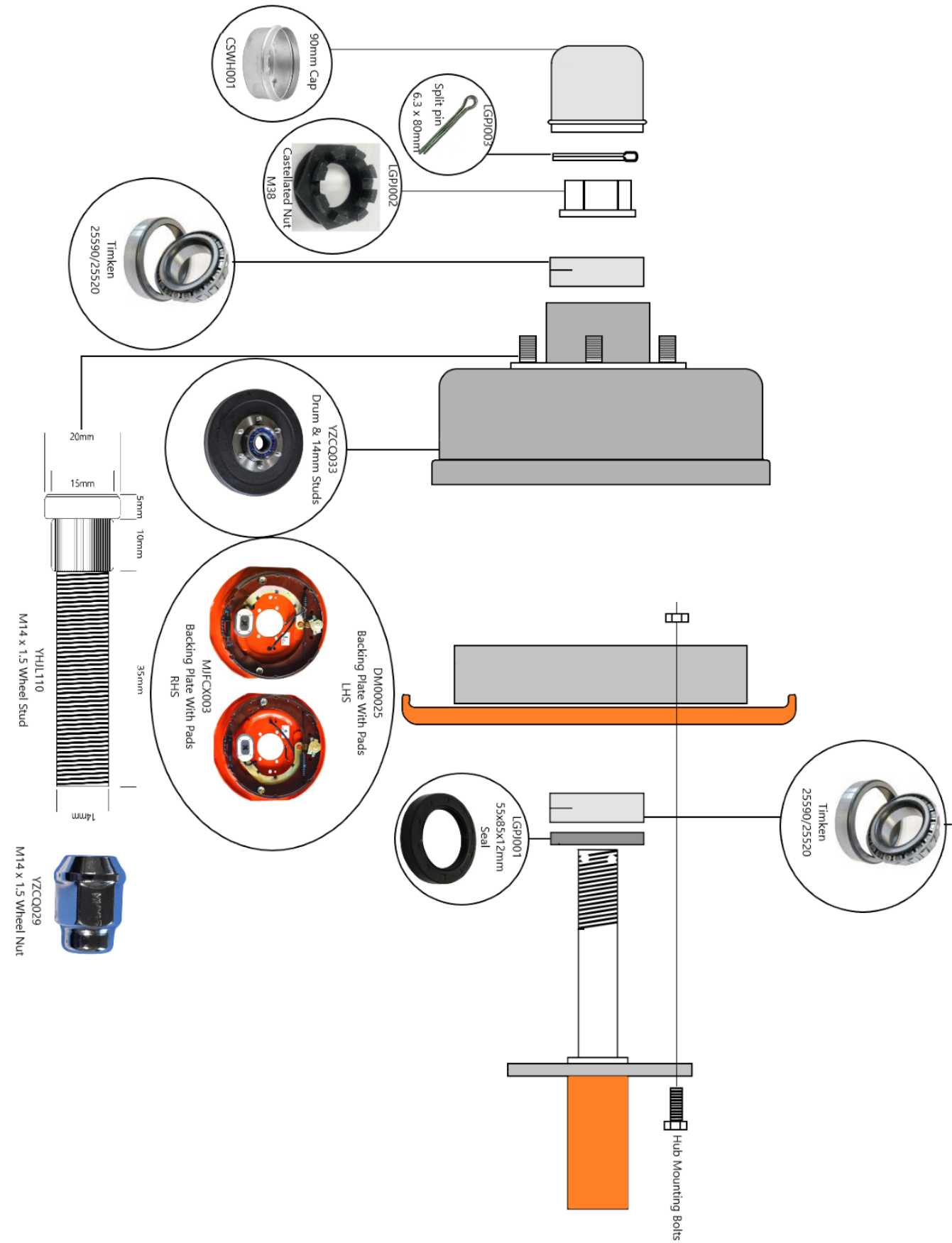


Wheel Alignment

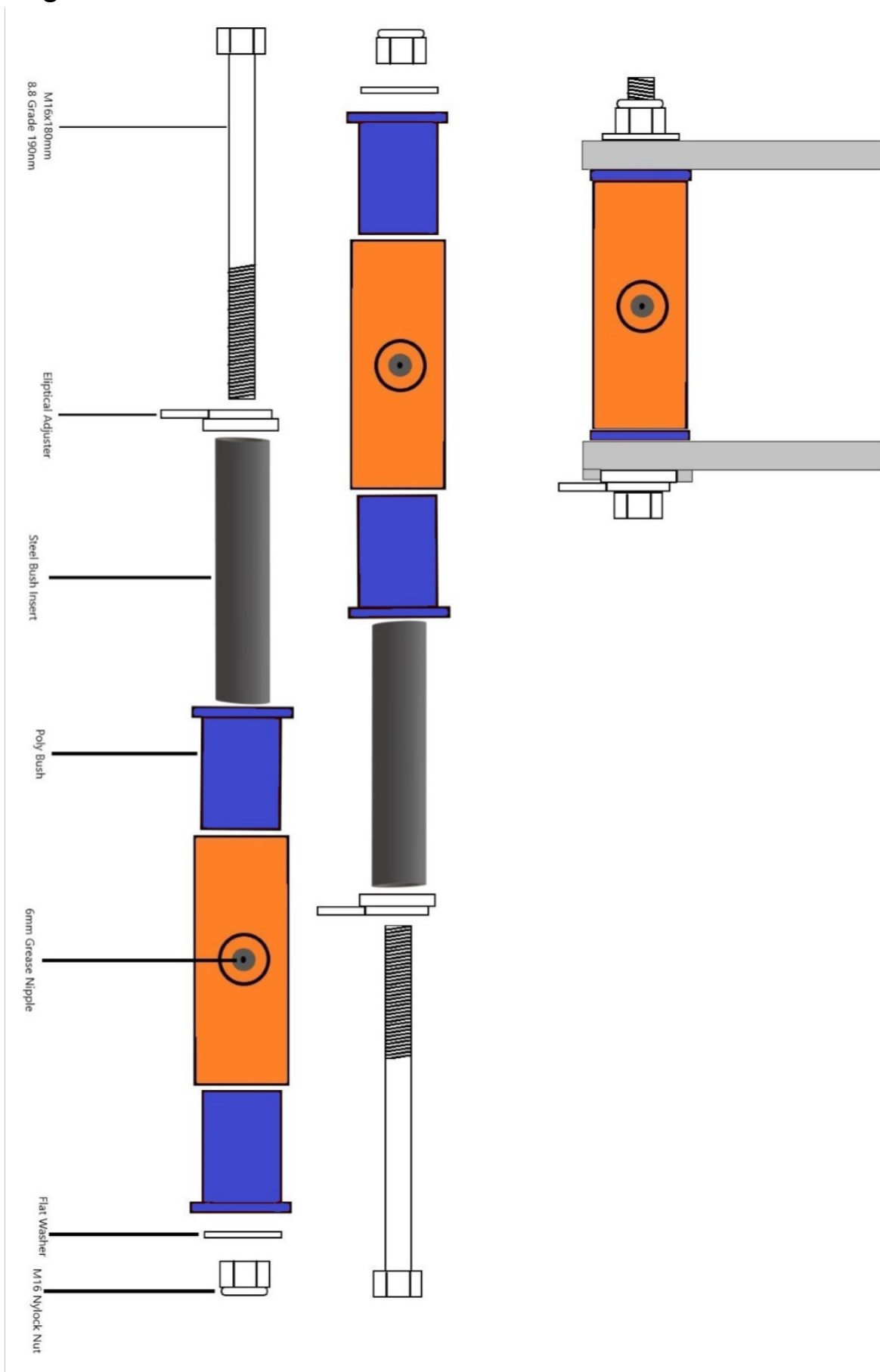
The wheels on your caravan are aligned at the factory. Refrain from backing up gutters and obstruction heavily. Always create a ramp when reversing obstacles to prevent premature misalignment of the wheels. Wheel alignment should be checked regularly every 10,000km or when tyre wear indicates.



Hub Assembly



Trailing Arm Bushes



Service Schedule

500KM FIRST SERVICE		CHECKED
Hitch	• Check hitch bolts to 90Nm. • Lubricate with high temp bearing grease	
Handbrake	• Inspect and adjust handbrake	
Brakes & Bearings	• Inspect and adjust brakes. Check bearings are well greased and crown nut is correctly tightened.	
Wheel nuts	• Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims) (200Nm 14mm studs steel rims)	
Tyres	• Inspect for abnormal wear, damage, and pressure	
General fixings	• Ensure no loose fittings	
Seals & Latches	• Check all seals on doors and hatches compress 30-50%. All seals in serviceable condition and free of damage.	
Suspension	• Grease bushes and check for play. • Check torque on suspension hanger bolts (190nm) • Check retaining chain shackles tight.	
Service Centre:	Notes: 	

Every 6 MONTHS / 5,000KM SERVICE		CHECKED
Hitch	Check hitch bolts to 90Nm	
Handbrake	Check cable and adjust if necessary	
Hand winch	Check brake function and webbing	
Suspension	- Lubricate and check bushes for excess movement. - Torque bolts to 190Nm	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Remove, clean and re-lubricate. Inspect for wear and replace if necessary	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims), (200Nm 14mm studs steel rims)	
Tyres	Inspect for abnormal wear, damage, and pressure	
Lights	Check all lights are functioning	
Battery	Check terminals and voltage at full charge	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	
General fixings	Check all structural fixing are secure.	
Seals & Latches	Check all seals on doors and hatches compress 30-50%. All seals in serviceable condition and free of damage.	
Suspension	- Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight.	
Service Centre:	Notes:	

12 MONTHS / 10,000KM SERVICE		CHECKED
Chassis and Suspension		
Hitch	Inspect for damage and lubricate. Check bolt Torque to 90Nm	
Jockey Wheel	Inspect for condition and operation	
Breakaway	- Check for correct operation. - Inspect lanyard and clip	
Drawbar	Inspect wiring grommets and general condition	
Suspension	- Torque bolts to 190Nm - Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight. - Inspect shock absorber for condition. - Inspect shock absorber bushes	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Replace bearings, seals and lubricate. Check stub axle condition and wear. Replace split pin.	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims) (200Nm 14mm studs steel rims)	
Tyres	- Inspect for abnormal wear, damage, and pressure. - Check manufacturing date less than 5 years. - Check sidewalls for perishing and damage.	
12 volt electrical		
Lights	- Check all trailer lights are functioning. - Check plug pins have gap. - Check for corrosion	
Battery	- Check terminals and voltage at full charge. - Check batteries are secure in cradles	
Charging	- Check battery charger settings are correct. - Check DC to DC charger settings are correct	
Solar Panels	- Check panels are free of damage. - Inspect sealants on cable penetrations and junction boxes	
Cables	- Inspect cables under body for damage to conduits. - Inspect cable glands and sealants on penetrations through floor	
240 volt Electrical		
RCD Unit	Check operation of RCD via test button	
Mains Input	Inspect mains input plug and cover are free of damage	
Earthing	Carry out resistance check	
Caravan Body		
Hatches & Doors	Check and lubricate locks	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	

Body	• Inspect joint sealants inside and out. • Ensure joints checked for damage and adhesion. • Inspect for soft spots on floor	
General fixings	• Check all structural fixing are secure.	
Ventilation	• Inspect for obstruction and vents operating correctly	
Fire Extinguisher	• Inspect extinguisher is charged and within service date	
Smoke Alarm	• Test and inspect. • Replace battery	
Window Blinds	• Inspect and adjust tension where necessary	
Damp Check	• Inspect caravan for any dampness.	
Plumbing		
Hot Water System	• De-scale hot water service	
Water Tanks	• Treat tanks and entire system with bacteria killing tank cleaner and flush.	
Grey Water Tank	• Treat with tank cleaner and flush.	
Drain Fittings	• Check all metal drain fittings for corrosion	
Water System	• Inspect for leaks. Turn on pump and ensure it doesn't start due to loss of pressure.	
Service Centre:	Notes: 	

18 MONTHS / 15,000KM SERVICE		CHECKED
Hitch	Check hitch bolts to 90Nm	
Handbrake	Check cable and adjust if necessary	
Hand winch	Check brake function and webbing	
Suspension	- Lubricate and check bushes for excess movement. - Torque bolts to 190Nm	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Remove, clean and re-lubricate. Inspect for wear and replace if necessary	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims), (200Nm 14mm studs steel rims)	
Tyres	Inspect for abnormal wear, damage, and pressure	
Lights	Check all lights are functioning	
Battery	Check terminals and voltage at full charge	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	
General fixings	Check all structural fixing are secure.	
Seals & Latches	Check all seals on doors and hatches compress 30-50%. All seals in serviceable condition and free of damage.	
Suspension	- Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight.	
Service Centre:	Notes:	

24 MONTHS / 20,000KM SERVICE		CHECKED
Chassis and Suspension		
Hitch	Inspect for damage and lubricate. Check bolt Torque to 90Nm	
Jockey Wheel	Inspect for condition and operation	
Breakaway	- Check for correct operation. - Inspect lanyard and clip	
Drawbar	Inspect wiring grommets and general condition	
Suspension	- Torque bolts to 190Nm - Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight. - Inspect shock absorber for condition. - Inspect shock absorber bushes	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Replace bearings, seals and lubricate. Check stub axle condition and wear. Replace split pin.	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims) (200Nm 14mm studs steel rims)	
Tyres	- Inspect for abnormal wear, damage, and pressure. - Check manufacturing date less than 5 years. - Check sidewalls for perishing and damage	
12 volt electrical		
Lights	- Check all trailer lights are functioning. - Check plug pins have gap. - Check for corrosion	
Battery	- Check terminals and voltage at full charge. - Check batteries are secure in cradles	
Charging	- Check battery charger settings are correct. - Check DC to DC charger settings are correct	
Solar Panels	- Check panels are free of damage. - Inspect sealants on cable penetrations and junction boxes	
Cables	- Inspect cables under body for damage to conduits. - Inspect cable glands and sealants on penetrations through floor	
240 volt Electrical		
RCD Unit	Check operation of RCD via test button	
Mains Input	Inspect mains input plug and cover are free of damage	
Earthing	Carry out resistance check	
Caravan Body		
Hatches & Doors	Check and lubricate locks	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	

Body	• Inspect joint sealants inside and out • Ensuite joints checked for damage and adhesion • Inspect for soft spots on floor	
General fixings	• Check all structural fixing are secure.	
Ventilation	• Inspect for obstruction and vents operating correctly	
Fire Extinguisher	• Inspect extinguisher is charged and within service date	
Smoke Alarm	• Test and inspect. • Replace battery	
Window Blinds	• Inspect and adjust tension where necessary	
Damp Check	• Inspect caravan for any dampness.	
Plumbing		
Hot Water System	• De-scale hot water service	
Water Tanks	• Treat tanks and entire system with bacteria killing tank cleaner and flush.	
Grey Water Tank	• Treat with tank cleaner and flush.	
Drain Fittings	• Check all metal drain fittings for corrosion	
Water System	• Inspect for leaks. Turn on pump and ensure it doesn't start due to loss of pressure.	
Service Centre:	Notes: 	

30 MONTHS / 25,000KM SERVICE		CHECKED
Hitch	Check hitch bolts to 90Nm	
Handbrake	Check cable and adjust if necessary	
Hand winch	Check brake function and webbing	
Suspension	- Lubricate and check bushes for excess movement. - Torque bolts to 190Nm	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Remove, clean and re-lubricate. Inspect for wear and replace if necessary	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims), (200Nm 14mm studs steel rims)	
Tyres	Inspect for abnormal wear, damage, and pressure	
Lights	Check all lights are functioning	
Battery	Check terminals and voltage at full charge	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	
General fixings	Check all structural fixing are secure.	
Seals & Latches	Check all seals on doors and hatches compress 30-50%. All seals in serviceable condition and free of damage.	
Suspension	- Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight.	
Service Centre:	Notes:	

36 MONTHS / 30,000KM SERVICE		CHECKED
Chassis and Suspension		
Hitch	Inspect for damage and lubricate. Check bolt Torque to 90Nm	
Jockey Wheel	Inspect for condition and operation	
Breakaway	- Check for correct operation. - Inspect lanyard and clip	
Drawbar	Inspect wiring grommets and general condition	
Suspension	- Torque bolts to 190Nm - Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight. - Inspect shock absorber for condition. - Inspect shock absorber bushes	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Replace bearings, seals and lubricate. Check stub axle condition and wear. Replace split pin.	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims) (200Nm 14mm studs steel rims)	
Tyres	- Inspect for abnormal wear, damage, and pressure. - Check manufacturing date less than 5 years. - Check sidewalls for perishing and damage	
12 volt electrical		
Lights	- Check all trailer lights are functioning. - Check plug pins have gap. - Check for corrosion	
Battery	- Check terminals and voltage at full charge. - Check batteries are secure in cradles	
Charging	- Check battery charger settings are correct. - Check DC to DC charger settings are correct	
Solar Panels	- Check panels are free of damage. - Inspect sealants on cable penetrations and junction boxes	
Cables	- Inspect cables under body for damage to conduits. - Inspect cable glands and sealants on penetrations through floor	
240 volt Electrical		
RCD Unit	Check operation of RCD via test button	
Mains Input	Inspect mains input plug and cover are free of damage	
Earthing	Carry out resistance check	
Caravan Body		
Hatches & Doors	Check and lubricate locks	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	

Body	• Inspect joint sealants inside and out. • Ensuite joints checked for damage and adhesion. • Inspect for soft spots on floor	
General fixings	• Check all structural fixing are secure.	
Ventilation	• Inspect for obstruction and vents operating correctly	
Fire Extinguisher	• Inspect extinguisher is charged and within service date	
Smoke Alarm	• Test and inspect. • Replace battery	
Window Blinds	• Inspect and adjust tension where necessary	
Damp Check	• Inspect caravan for any dampness.	
Plumbing		
Hot Water System	• De-scale hot water service	
Water Tanks	• Treat tanks and entire system with bacteria killing tank cleaner and flush.	
Grey Water Tank	• Treat with tank cleaner and flush.	
Drain Fittings	• Check all metal drain fittings for corrosion	
Water System	• Inspect for leaks. Turn on pump and ensure it doesn't start due to loss of pressure.	
Service Centre:	Notes: 	

42 MONTHS / 35,000KM SERVICE		CHECKED
Hitch	Check hitch bolts to 90Nm	
Handbrake	Check cable and adjust if necessary	
Hand winch	Check brake function and webbing	
Suspension	- Lubricate and check bushes for excess movement. - Torque bolts to 190Nm	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Remove, clean and re-lubricate. Inspect for wear and replace if necessary	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims), (200Nm 14mm studs steel rims)	
Tyres	Inspect for abnormal wear, damage, and pressure	
Lights	Check all lights are functioning	
Battery	Check terminals and voltage at full charge	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	
General fixings	Check all structural fixing are secure.	
Seals & Latches	Check all seals on doors and hatches compress 30-50%. All seals in serviceable condition and free of damage.	
Suspension	- Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight.	
Service Centre:	Notes:	

48 MONTHS / 40,000KM SERVICE		CHECKED
Chassis and Suspension		
Hitch	Inspect for damage and lubricate. Check bolt Torque to 90Nm	
Jockey Wheel	Inspect for condition and operation	
Breakaway	- Check for correct operation. - Inspect lanyard and clip	
Drawbar	Inspect wiring grommets and general condition	
Suspension	- Torque bolts to 190Nm - Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight. - Inspect shock absorber for condition. - Inspect shock absorber bushes	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Replace bearings, seals and lubricate. Check stub axle condition and wear. Replace split pin.	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims) (200Nm 14mm studs steel rims)	
Tyres	- Inspect for abnormal wear, damage, and pressure. - Check manufacturing date less than 5 years. - Check sidewalls for perishing and damage	
12 volt electrical		
Lights	- Check all trailer lights are functioning. - Check plug pins have gap. - Check for corrosion	
Battery	- Check terminals and voltage at full charge. - Check batteries are secure in cradles	
Charging	- Check battery charger settings are correct. - Check DC to DC charger settings are correct	
Solar Panels	- Check panels are free of damage. - Inspect sealants on cable penetrations and junction boxes	
Cables	- Inspect cables under body for damage to conduits. - Inspect cable glands and sealants on penetrations through floor	
240 volt Electrical		
RCD Unit	Check operation of RCD via test button	
Mains Input	Inspect mains input plug and cover are free of damage	
Earthing	Carry out resistance check	
Caravan Body		
Hatches & Doors	Check and lubricate locks	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	

Body	• Inspect joint sealants inside and out. • Ensuite joints checked for damage and adhesion. • Inspect for soft spots on floor	
General fixings	• Check all structural fixing are secure.	
Ventilation	• Inspect for obstruction and vents operating correctly	
Fire Extinguisher	• Inspect extinguisher is charged and within service date	
Smoke Alarm	• Test and inspect. • Replace battery	
Window Blinds	• Inspect and adjust tension where necessary	
Damp Check	• Inspect caravan for any dampness.	
Plumbing		
Hot Water System	• De-scale hot water service	
Water Tanks	• Treat tanks and entire system with bacteria killing tank cleaner and flush.	
Grey Water Tank	• Treat with tank cleaner and flush.	
Drain Fittings	• Check all metal drain fittings for corrosion	
Water System	• Inspect for leaks. Turn on pump and ensure it doesn't start due to loss of pressure.	
Service Centre:	Notes: 	

54 MONTHS / 45,000KM SERVICE		CHECKED
Hitch	Check hitch bolts to 90Nm	
Handbrake	Check cable and adjust if necessary	
Hand winch	Check brake function and webbing	
Suspension	- Lubricate and check bushes for excess movement. - Torque bolts to 190Nm	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Remove, clean and re-lubricate. Inspect for wear and replace if necessary	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims), (200Nm 14mm studs steel rims)	
Tyres	Inspect for abnormal wear, damage, and pressure	
Lights	Check all lights are functioning	
Battery	Check terminals and voltage at full charge	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	
General fixings	Check all structural fixing are secure.	
Seals & Latches	Check all seals on doors and hatches compress 30-50%. All seals in serviceable condition and free of damage.	
Suspension	- Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight.	
Service Centre:	Notes:	

60 MONTHS / 50,000KM SERVICE		CHECKED
Chassis and Suspension		
Hitch	Inspect for damage and lubricate. Check bolt Torque to 90Nm	
Jockey Wheel	Inspect for condition and operation	
Breakaway	- Check for correct operation. - Inspect lanyard and clip	
Drawbar	Inspect wiring grommets and general condition	
Suspension	- Torque bolts to 190Nm - Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight. - Inspect shock absorber for condition. - Inspect shock absorber bushes	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Replace bearings, seals and lubricate. Check stub axle condition and wear. Replace split pin.	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims) (200Nm 14mm studs steel rims)	
Tyres	- Inspect for abnormal wear, damage, and pressure. - Check manufacturing date less than 5 years. - Check sidewalls for perishing and damage	
12 volt electrical		
Lights	- Check all trailer lights are functioning. - Check plug pins have gap. - Check for corrosion	
Battery	- Check terminals and voltage at full charge. - Check batteries are secure in cradles	
Charging	- Check battery charger settings are correct. - Check DC to DC charger settings are correct	
Solar Panels	- Check panels are free of damage. - Inspect sealants on cable penetrations and junction boxes	
Cables	- Inspect cables under body for damage to conduits. - Inspect cable glands and sealants on penetrations through floor	
240 volt Electrical		
RCD Unit	Check operation of RCD via test button	
Mains Input	Inspect mains input plug and cover are free of damage	
Earthing	Carry out resistance check	
Caravan Body		
Hatches & Doors	Check and lubricate locks	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	

Body	• Inspect joint sealants inside and out. • Ensure joints checked for damage and adhesion. • Inspect for soft spots on floor	
General fixings	• Check all structural fixing are secure.	
Ventilation	• Inspect for obstruction and vents operating correctly	
Fire Extinguisher	• Inspect extinguisher is charged and within service date	
Smoke Alarm	• Test and inspect. • Replace battery	
Window Blinds	• Inspect and adjust tension where necessary	
Damp Check	• Inspect caravan for any dampness.	
Plumbing		
Hot Water System	• De-scale hot water service	
Water Tanks	• Treat tanks and entire system with bacteria killing tank cleaner and flush.	
Grey Water Tank	• Treat with tank cleaner and flush.	
Drain Fittings	• Check all metal drain fittings for corrosion	
Water System	• Inspect for leaks. Turn on pump and ensure it doesn't start due to loss of pressure.	
Service Centre:	Notes: 	

66 MONTHS / 55,000KM SERVICE		CHECKED
Hitch	Check hitch bolts to 90Nm	
Handbrake	Check cable and adjust if necessary	
Hand winch	Check brake function and webbing	
Suspension	- Lubricate and check bushes for excess movement. - Torque bolts to 190Nm	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Remove, clean and re-lubricate. Inspect for wear and replace if necessary	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims), (200Nm 14mm studs steel rims)	
Tyres	Inspect for abnormal wear, damage and pressure	
Lights	Check all lights are functioning	
Battery	Check terminals and voltage at full charge	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	
General fixings	Check all structural fixing are secure.	
Seals & Latches	Check all seals on doors and hatches compress 30-50%. All seals in serviceable condition and free of damage.	
Suspension	- Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight.	
Service Centre:	Notes: 	

72 MONTHS / 60,000KM SERVICE		CHECKED
Chassis and Suspension		
Hitch	Inspect for damage and lubricate. Check bolt Torque to 90Nm	
Jockey Wheel	Inspect for condition and operation	
Breakaway	- Check for correct operation. - Inspect lanyard and clip	
Drawbar	Inspect wiring grommets and general condition	
Suspension	- Torque bolts to 190Nm - Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight. - Inspect shock absorber for condition. - Inspect shock absorber bushes	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Replace bearings, seals and lubricate. Check stub axle condition and wear. Replace split pin.	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims) (200Nm 14mm studs steel rims)	
Tyres	- Inspect for abnormal wear, damage, and pressure. - Check manufacturing date less than 5 years. - Check sidewalls for perishing and damage	
12 volt electrical		
Lights	- Check all trailer lights are functioning. - Check plug pins have gap. - Check for corrosion	
Battery	- Check terminals and voltage at full charge. - Check batteries are secure in cradles	
Charging	- Check battery charger settings are correct. - Check DC to DC charger settings are correct	
Solar Panels	- Check panels are free of damage. - Inspect sealants on cable penetrations and junction boxes	
Cables	- Inspect cables under body for damage to conduits. - Inspect cable glands and sealants on penetrations through floor	
240 volt Electrical		
RCD Unit	Check operation of RCD via test button	
Mains Input	Inspect mains input plug and cover are free of damage	
Earthing	Carry out resistance check	
Caravan Body		
Hatches & Doors	Check and lubricate locks	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	

Body	• Inspect joint sealants inside and out. • Ensuite joints checked for damage and adhesion. • Inspect for soft spots on floor	
General fixings	• Check all structural fixing are secure.	
Ventilation	• Inspect for obstruction and vents operating correctly	
Fire Extinguisher	• Inspect extinguisher is charged and within service date	
Smoke Alarm	• Test and inspect. • Replace battery	
Window Blinds	• Inspect and adjust tension where necessary	
Damp Check	• Inspect caravan for any dampness.	
Plumbing		
Hot Water System	• De-scale hot water service	
Water Tanks	• Treat tanks and entire system with bacteria killing tank cleaner and flush.	
Grey Water Tank	• Treat with tank cleaner and flush.	
Drain Fittings	• Check all metal drain fittings for corrosion	
Water System	• Inspect for leaks. Turn on pump and ensure it doesn't start due to loss of pressure.	
Service Centre:	Notes: 	

78 MONTHS / 65,000KM SERVICE		CHECKED
Hitch	Check hitch bolts to 90Nm	
Handbrake	Check cable and adjust if necessary	
Hand winch	Check brake function and webbing	
Suspension	- Lubricate and check bushes for excess movement. - Torque bolts to 190Nm	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Remove, clean and re-lubricate. Inspect for wear and replace if necessary	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims), (200Nm 14mm studs steel rims)	
Tyres	Inspect for abnormal wear, damage, and pressure	
Lights	Check all lights are functioning	
Battery	Check terminals and voltage at full charge	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	
General fixings	Check all structural fixing are secure.	
Seals & Latches	Check all seals on doors and hatches compress 30-50%. All seals in serviceable condition and free of damage.	
Suspension	- Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight.	
Service Centre:	Notes:	

84 MONTHS / 70,000KM SERVICE		CHECKED
Chassis and Suspension		
Hitch	Inspect for damage and lubricate. Check bolt Torque to 90Nm	
Jockey Wheel	Inspect for condition and operation	
Breakaway	- Check for correct operation. - Inspect lanyard and clip	
Drawbar	Inspect wiring grommets and general condition	
Suspension	- Torque bolts to 190Nm - Grease bushes and check for play. - Check torque on suspension hanger bolts (190nm) - Check retaining chain shackles tight. - Inspect shock absorber for condition. - Inspect shock absorber bushes	
Brakes	Inspect and adjust. Check lining thickness and drum wear	
Wheel bearings	Replace bearings, seals and lubricate. Check stub axle condition and wear. Replace split pin.	
Wheel Nuts	Inspect condition and torque to 125Nm (12mm studs) (140Nm 14mm studs alloy rims) (200Nm 14mm studs steel rims)	
Tyres	- Inspect for abnormal wear, damage, and pressure. - Check manufacturing date less than 5 years. - Check sidewalls for perishing and damage	
12 volt electrical		
Lights	- Check all trailer lights are functioning. - Check plug pins have gap. - Check for corrosion	
Battery	- Check terminals and voltage at full charge. - Check batteries are secure in cradles	
Charging	- Check battery charger settings are correct. - Check DC to DC charger settings are correct	
Solar Panels	- Check panels are free of damage. - Inspect sealants on cable penetrations and junction boxes	
Cables	- Inspect cables under body for damage to conduits. - Inspect cable glands and sealants on penetrations through floor	
240 volt Electrical		
RCD Unit	Check operation of RCD via test button	
Mains Input	Inspect mains input plug and cover are free of damage	
Earthing	Carry out resistance check	
Caravan Body		
Hatches & Doors	Check and lubricate locks	
Seals	Check condition and correct latch/lock adjustment for correct 30-50% compression	

Body	• Inspect joint sealants inside and out. • Ensuite joints checked for damage and adhesion. • Inspect for soft spots on floor	
General fixings	• Check all structural fixing are secure.	
Ventilation	• Inspect for obstruction and vents operating correctly	
Fire Extinguisher	• Inspect extinguisher is charged and within service date	
Smoke Alarm	• Test and inspect. • Replace battery	
Window Blinds	• Inspect and adjust tension where necessary	
Damp Check	• Inspect caravan for any dampness.	
Plumbing		
Hot Water System	• De-scale hot water service	
Water Tanks	• Treat tanks and entire system with bacteria killing tank cleaner and flush.	
Grey Water Tank	• Treat with tank cleaner and flush.	
Drain Fittings	• Check all metal drain fittings for corrosion	
Water System	• Inspect for leaks. Turn on pump and ensure it doesn't start due to loss of pressure.	
Service Centre:	Notes: 	

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Video Tutorials

The MDC YouTube channel has hundreds of instructional videos for you to learn the full setup, pack up and general use of your camper or caravan.

The “Masterclass” series is a collection of maintenance, tips, and safety videos to make the entire experience of owning a camper or caravan easier, safer, and more rewarding. You don’t know what you don’t know until you’ve seen it in a Masterclass.

Handover Tutorial

This video demonstrates requirements before pickup and all features and appliances



Scan the code or go to <https://youtu.be/HRRHVtMJPNI>

Setup Tutorial

This video demonstrates setting up the caravan



Scan the code or go to <https://youtu.be/-81haE7OkUA>

Pack Down Tutorial

This video demonstrates packing down the caravan



Scan the code or go to <https://youtu.be/73kWOB49a8>

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