XT17HRT+ MKIII

OFFROAD CARAVAN

OWNER'S MANUAL

2025 AC Plus Model

www.marketdirect.com.au

*2025 Model Shown

Phone: 1300 494 494

Table of Contents

DISCLAIMER: ***This manual is provided in good faith and Market Direct 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 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 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.

Market Direct 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 XT17HRT+ MKIII 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®

Safety Information

Safety Symbols

Immediate hazards that WILL result in severe injury or death if the warning is ignored.

Hazards or unsafe practices that COULD result in severe personal injury or death if the warning is ignored

Hazards or unsafe practices which could result in minor or moderate injury if the warning is ignored.

Practices that could result in damage to the trailer or other property

Helpful information and important points.

More information can be found in a separate document.

Introduction

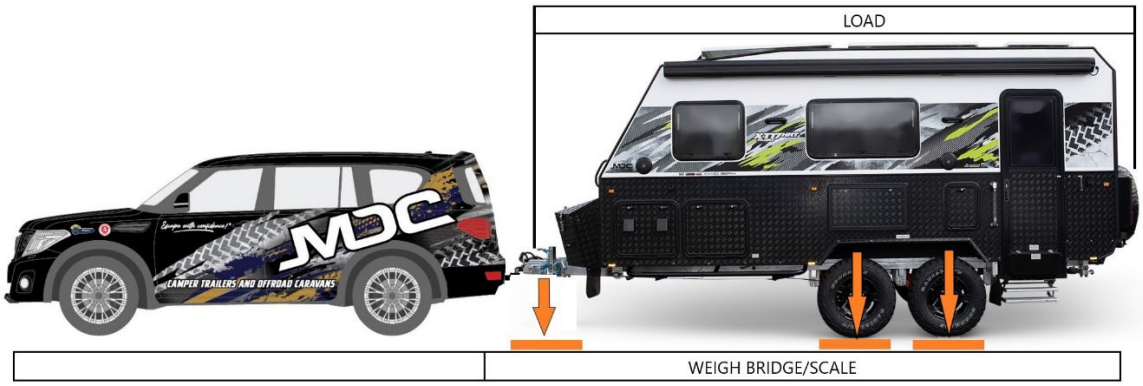
Off road caravanning is a rewarding way to travel and see our great country. Owning an MDC Caravan will afford you the opportunity to travel to remote places and stay in comfort. It is the intention of MDC for you tohave the best possible owner experience and enjoy the great outdoors.

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.

TARE WEIGHT

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.



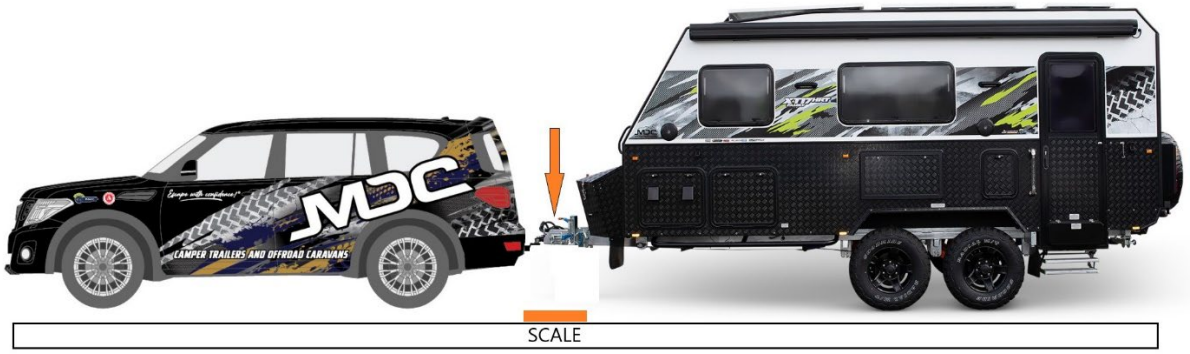
ATM AGGREGATE TRAILER MASS

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.

GTM GROSS TRAILER MASS

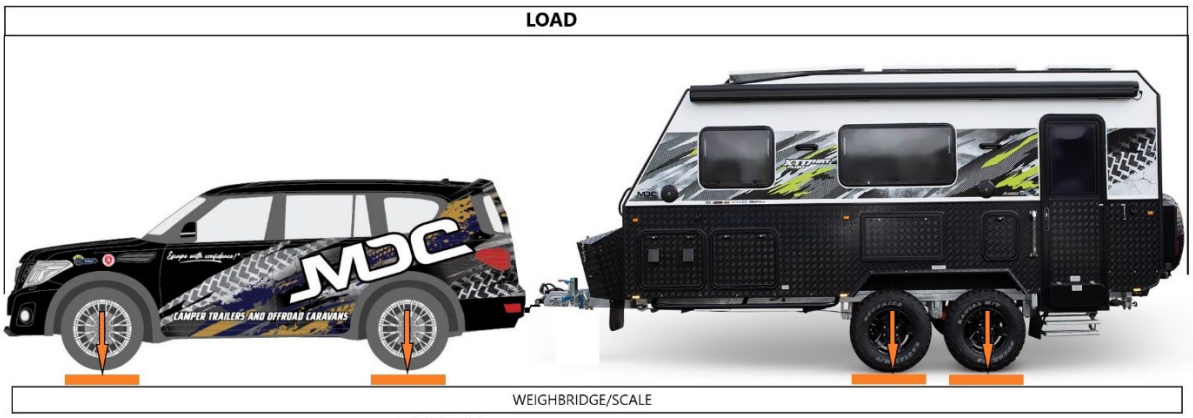
Caravans for illustration purposes only.

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



BALL/COUPLING WEIGHT

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



GCM GROSS COMBINATION MASS

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.

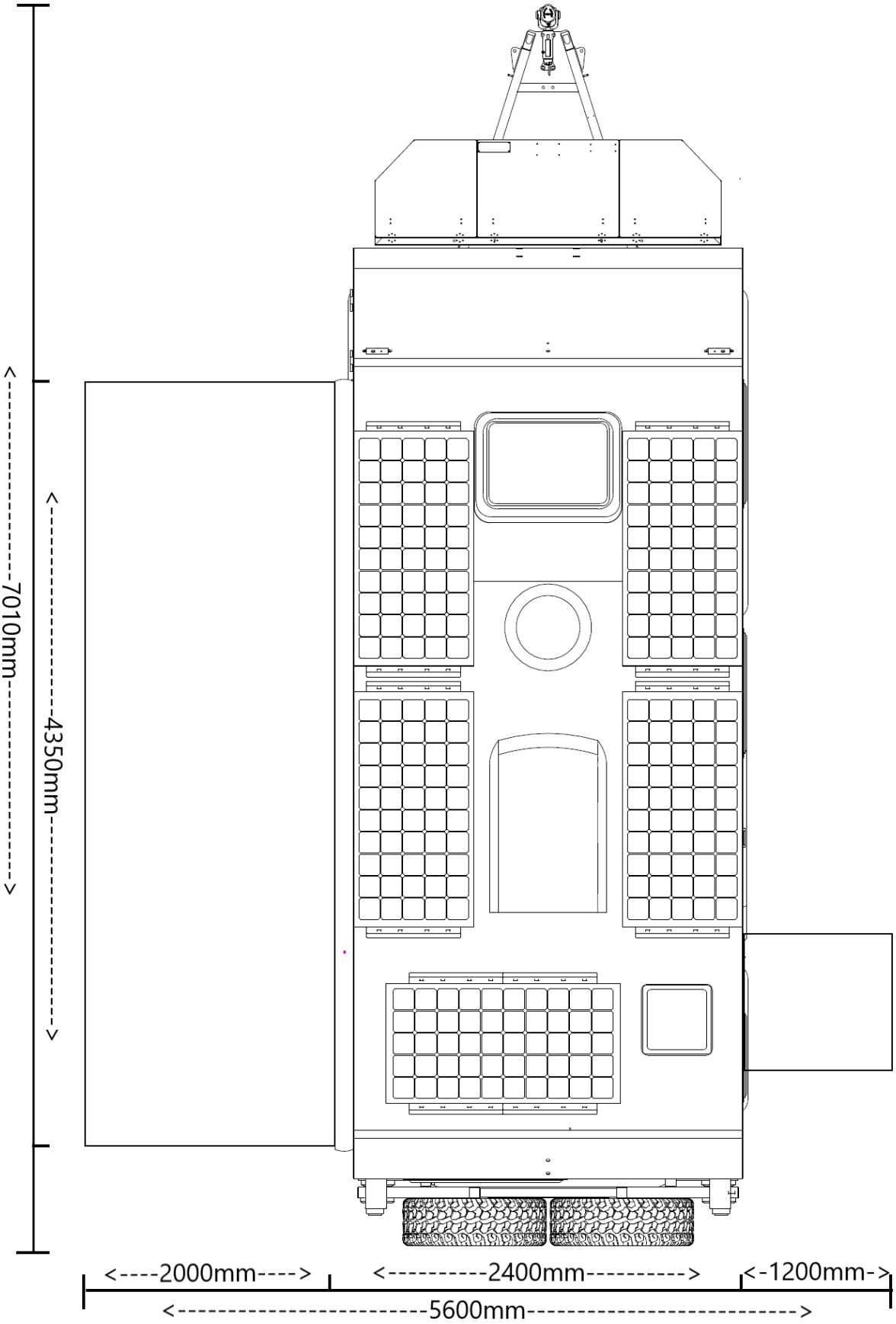
Tow vehicle and Trailer Compatibility

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.

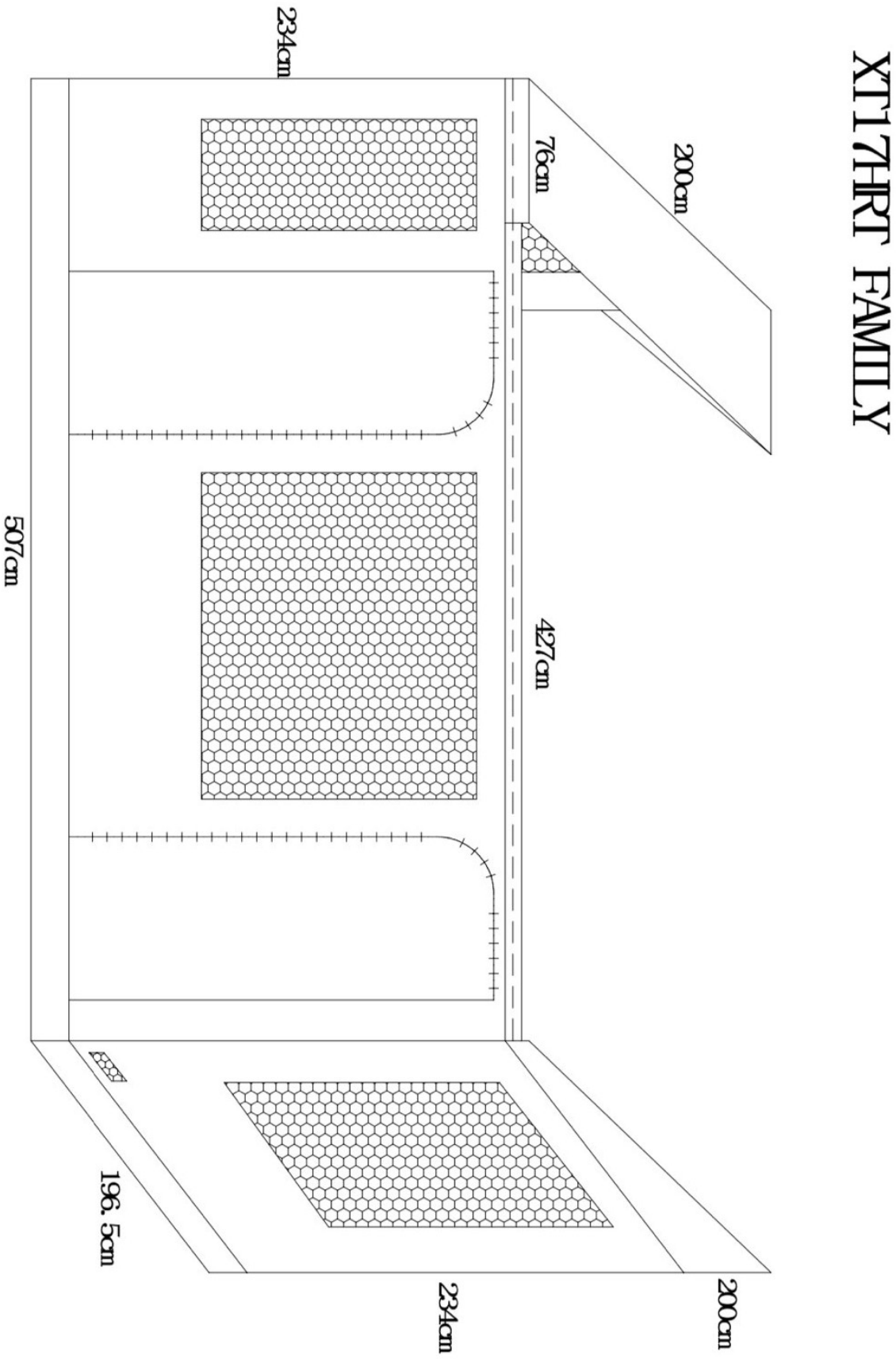
DANGER

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

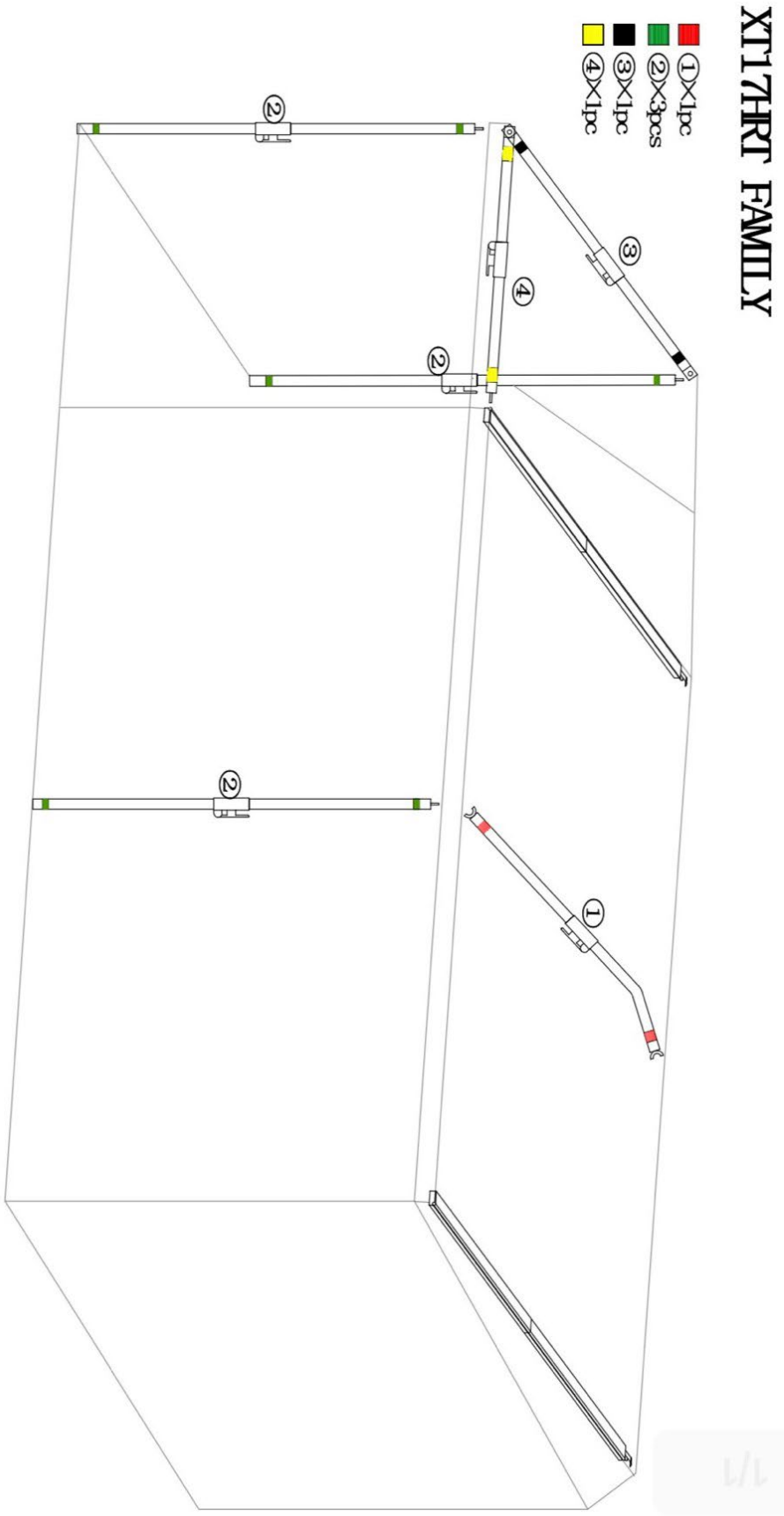
Dimensions



Annex


XT17HRT FAMILY
234cm
76cm
200cm
507cm
427cm
196. 5cm
234cm
200cm

Annex Pole Diagram



MDC Contact Details and Stores

QUEENSLAND	
Brisbane 3/711 Beaudesert Rd Rocklea QLD 4107	**Caboolture** 49 Lear Jet Drv Caboolture QLD 4510
NEW SOUTH WALES	
Sydney 111 Newbridge Rd Chipping Norton NSW 2170	**Newcastle** Unit 1, 2364 Pacific Hwy Heatherbrae NSW 2324
VICTORIA	
Melbourne 3/124 Canterbury Rd Kilsyth South VIC 3137	**Campbellfield** 17 Cooper St Campbellfield VIC 3061
WESTERN AUSTRALIA	
Perth 438 Great Eastern Hwy Ascot WA 6104	
SOUTH AUSTRALIA	
Adelaide Units 2,3 & 4/32-50 Weaver St Edwardstown SA 5042	
NATIONAL TOLL FREE	
1300 4X4 4X4 **1300 494 494**	

WARNING

Safety Information

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 we 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, WHICH EVER 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 andprevent 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 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 – whetherit 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

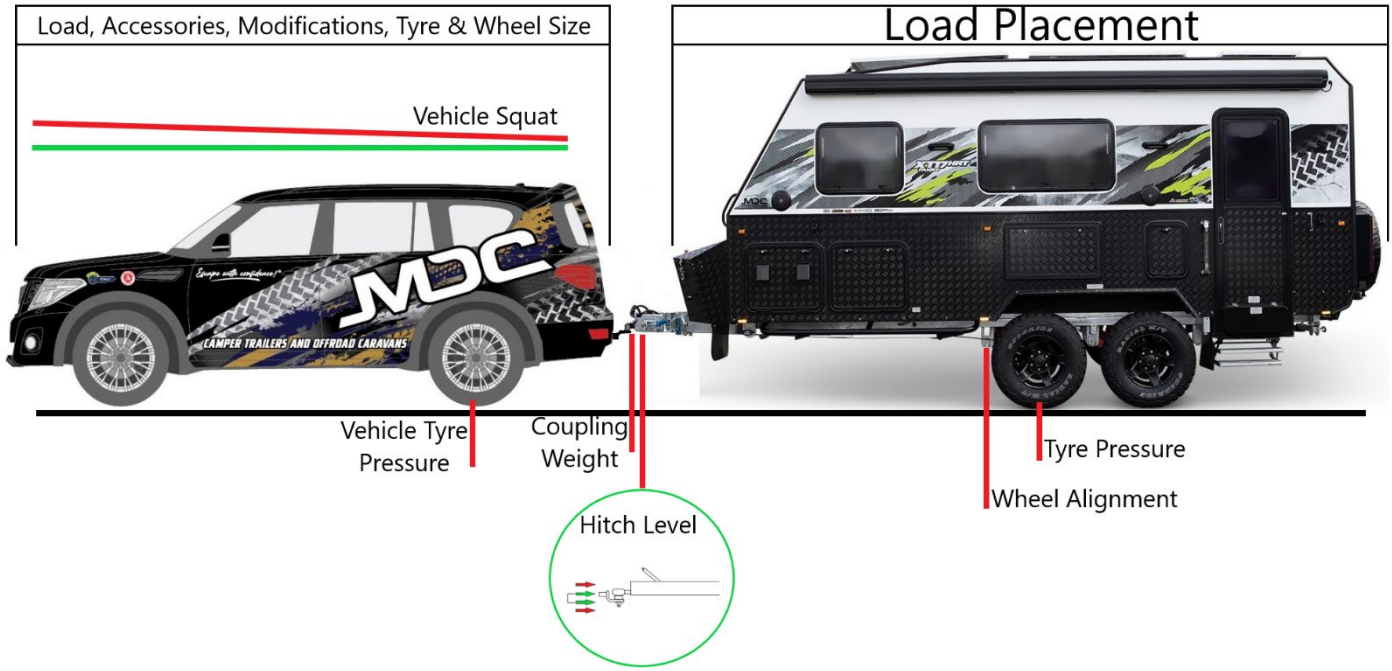
Ensure fire extinguisher is free of obstruction and in operable condition.
Ensure you are familiar with its location and operation.

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.

Achieving a Safe Towing Combination

Ensuring a camper or caravan is safe and easy to tow is generally an easy thing to achieve, this doesn't mean it's always the case and sometimes, a vehicle and trailer combination may need some tweaking to make it ideal. There are a number of 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

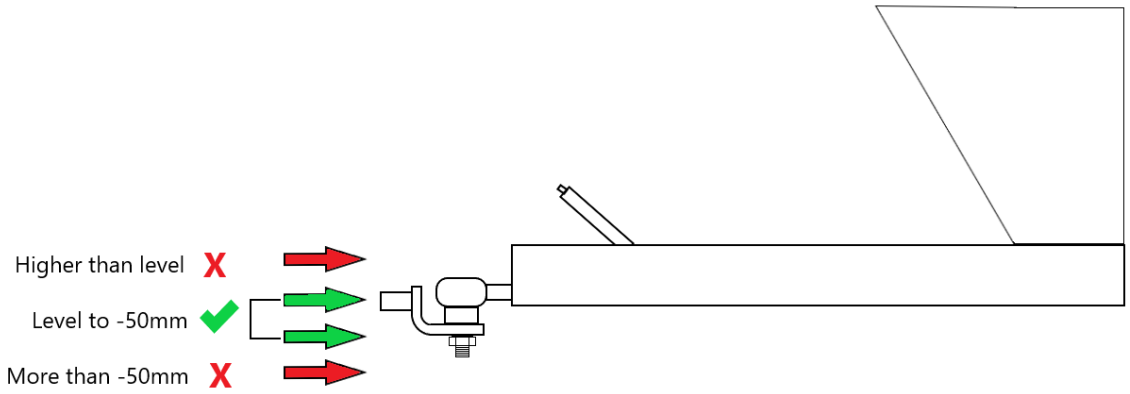
The ratio of overall weight of the trailer to the weight exhibited on the tow ball or coupling is an extremely important aspect of making a trailer handle correctly when towed. Generally, the ball or tongue weight allowed by most vehicle manufacturers is 10% of the maximum towing capacity. Given this 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 desires 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. The XT17HRT Family dual axles are not load sharing, therefore the trailer being level is optimum to sharing load equally.



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

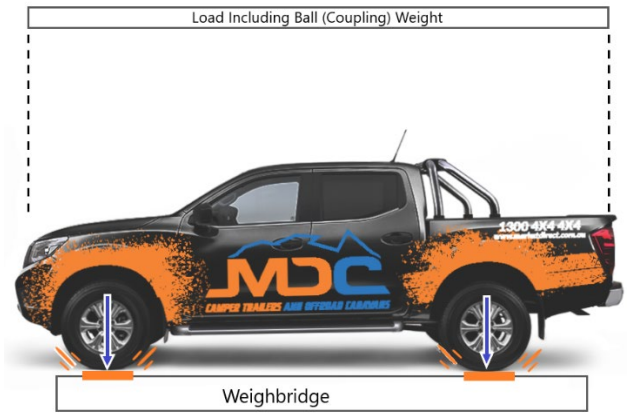
The following is an outline of the ratings that will be specified by the manufacturer of your vehicle and the camper/caravan manufacturer. These MUST be followed in conjunction with previously mentioned criteria for safe handling. None of the maximum ratings may be exceeded.

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:

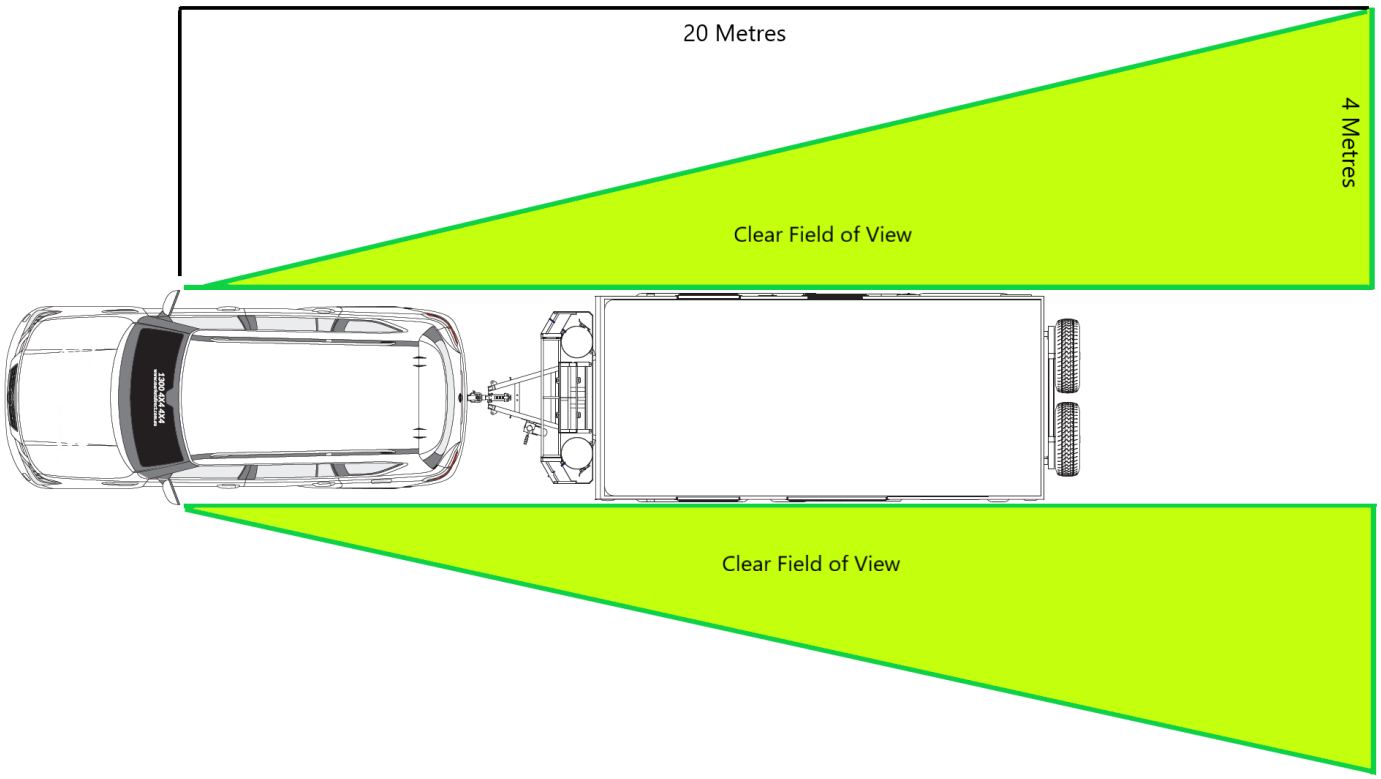
- Wheel alignment on both vehicle and trailer.
- Wear and tear on:
  - Suspension bushes
  - Shock absorbers
  - Springs
  - Tyres
- Tow vehicle tyre size (Oversize tyres)
- Extended hitches
- Distance between axle centre and hitch point
- Tow vehicle accessories (Weight distribution)
- Real life tow 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.



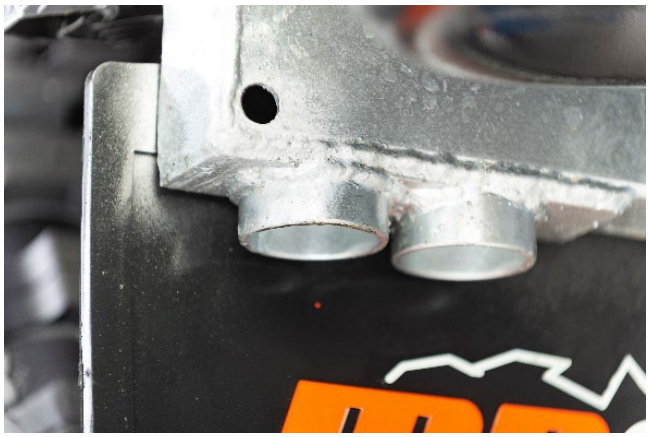
Note: Mirror extension attachments must be removed when not towing, fitted mirrors that extend must also be retracted when now towing.

Jacking Your Caravan or Camper

Your trailer is fitted with purpose built jacking points 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 if fitted, provided it has the correct positive engagement fitting to match the trailer. To ensure safe usage the following must be followed:

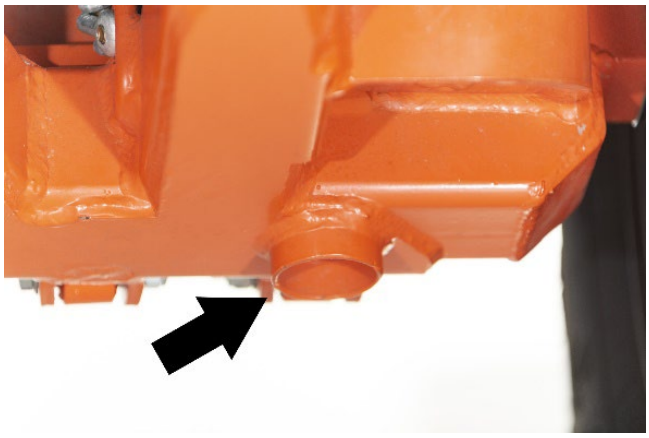
- **The jack is to be used on level firm ground wherever possible.**
- **The wheels of the trailer should be chocked, and no person should remain inside the trailer whilst it is being jacked.**
- **No person should place any portion of their body under a trailer that is supported by a jack.**
- **The 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 Kojack style Jack Only



Under the chassis Kojack Style Jack

Under the trailing arm (Bottle Jack only)



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

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)

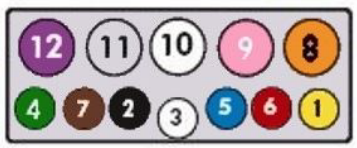
Charging Caravan While Driving

Plug Type – 50A Anderson Plug.

Vehicle with or without smart alternator

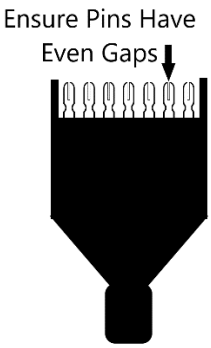
The Anderson plug can be connected to the start battery on the vehicle and should include the following to protect the start battery.

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

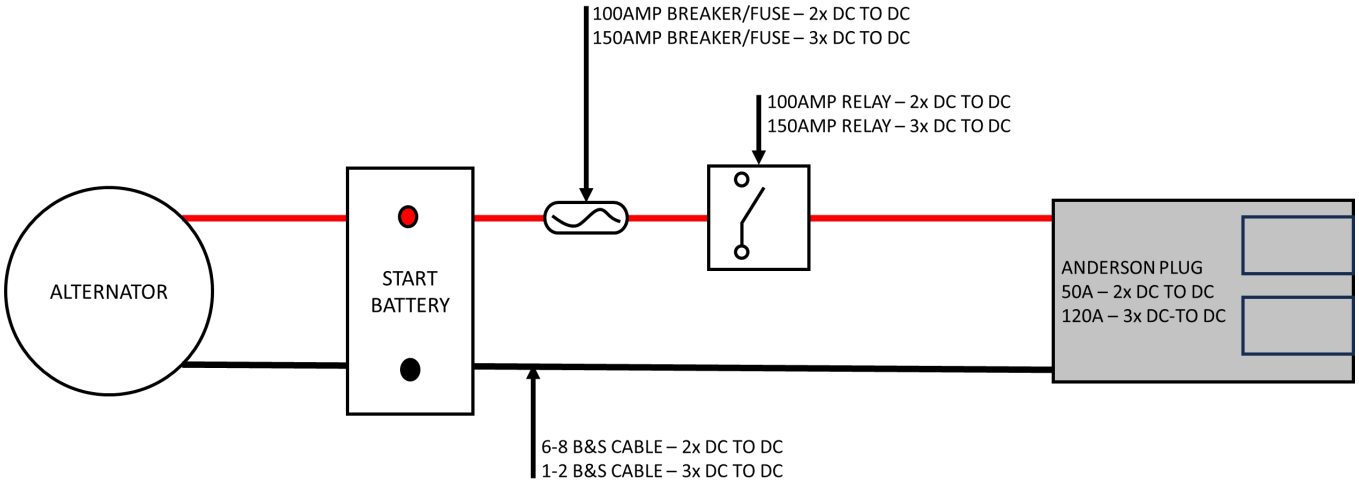
1. Left Indicator
2. Reverse lights
3. Earth
4. Right Indicator
5. Electric Brakes
6. Stop Lights
7. Taillights, clearance lights, side lights
8. N/A
9. N/A
10. N/A
11. N/A
12. Accessory power for DC to DC trigger wire



INFORMATION

The Projecta IDC25X DC to DC controllers 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.

Your caravan is fitted with 2x IDC25X units to manage the solar array, the combined output charge from these units can achieve up to 75A. However, only 2x of these units are wired to receive charge from the drawbar Anderson plug, limiting the combined output charge to the battery system from the tow vehicle to 50A. This is because whereas the IDC25X outputs 25A of charge to the battery, it can draw up to 40A from the alternator input. 2x combined IDC25X units can draw up to 80A from your alternator and 3x combined units can draw up to 120A. MDC limits this to 2x combined units to cater for most stock alternators. If your alternator can provide >120A of constant draw (taking vehicle requirements, trailer lighting and any aftermarket modifications into account), the 3rd IDC25X may be connected to the combined Anderson plug input.



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

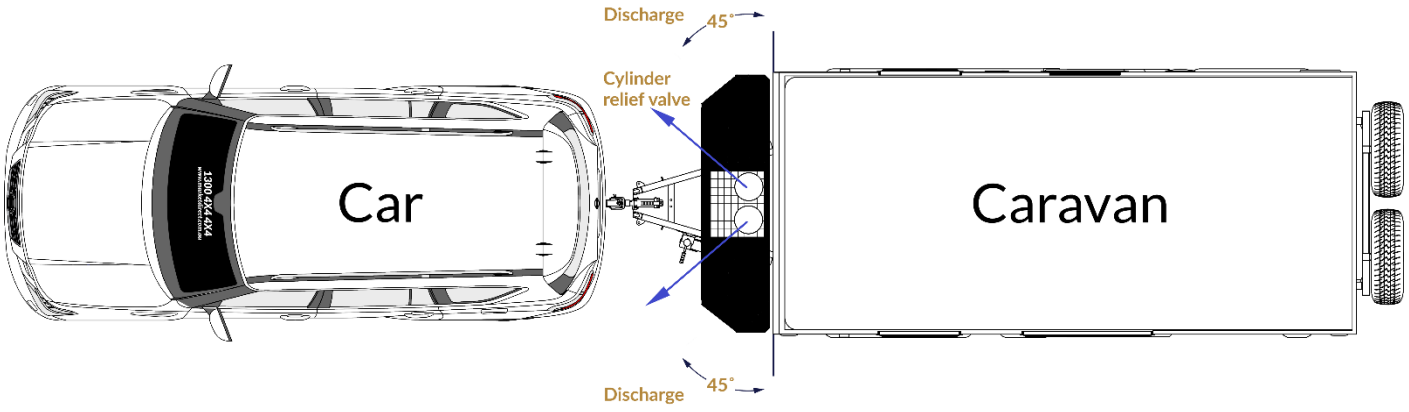
Your Caravan has been supplied gas tested and certified. Any additions or alterations to the gas system must be performed by an authorized person and will require re-certification and testing. Also note any alterations may affect your warranty on both the system and appliances.

General Safety

- Your Caravan may have a number of gas safety labels affixed throughout containing important information. Allinstructions 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 forleaks 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 fittingsto 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 regularlyby 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 awayfrom 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 unlesschanging 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 goingout. 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 affectthe 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 thegas 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.

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 uncovered at all times 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.

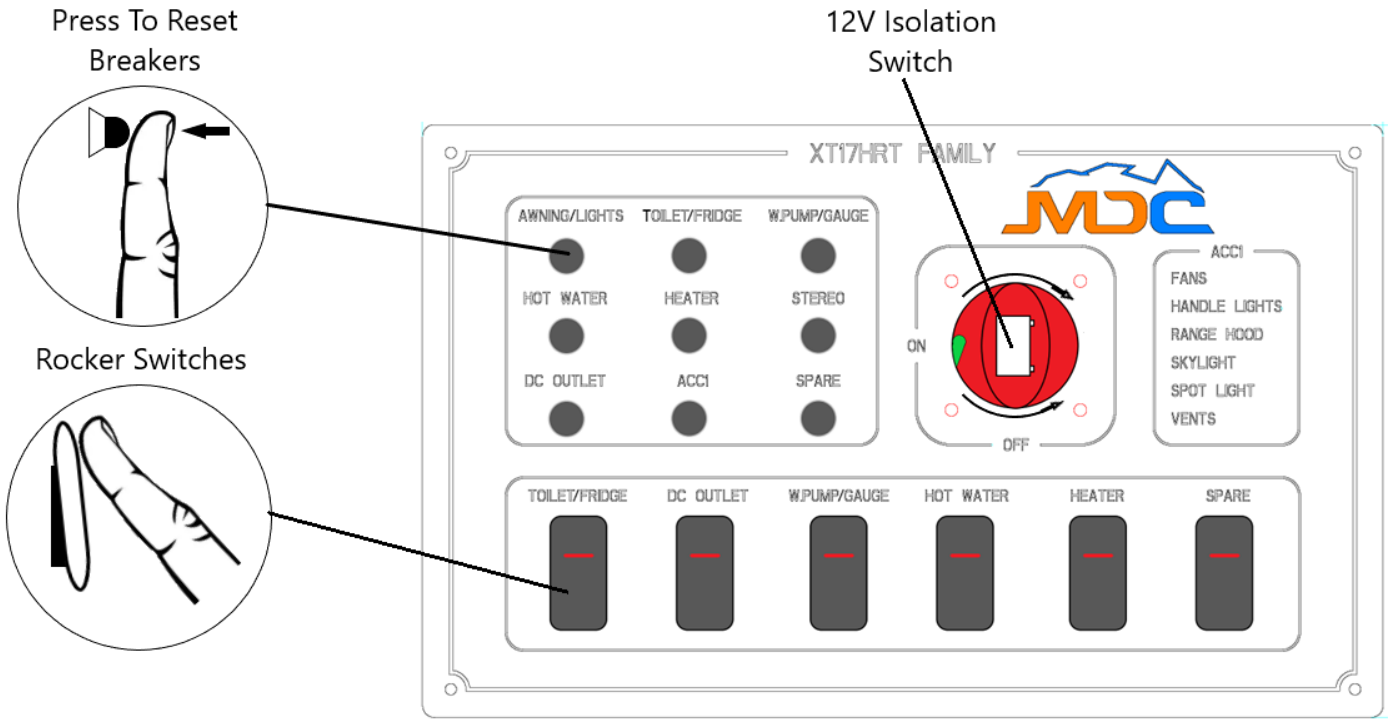
Basic Caravan Controls & Features

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.

XT17HRT Family MKIII



To operate the 12v electrics, turn the isolation switch to the “ON” position.

Rocker switches along the bottom of the panel allow you to turn on and off the electrical features notated on the panel above.

Press to reset breakers are the fusible link to each circuit. If a circuit becomes inoperative, these are the breakers to reset the 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.

BM500-BT Display

By pressing the two smaller buttons at the bottom centre of the display, you can scroll through the following:

- Voltage of the battery system
- Time to go until empty under the current load on the battery
- Current flowing in or out of the battery
- Percentage value of state of charge

Inverter Charger Display

This display can be used for the following:

- Turn the inverter on and off
- Program charge rate
- Display current flowing into the battery
- Display current used by the inverter

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.*

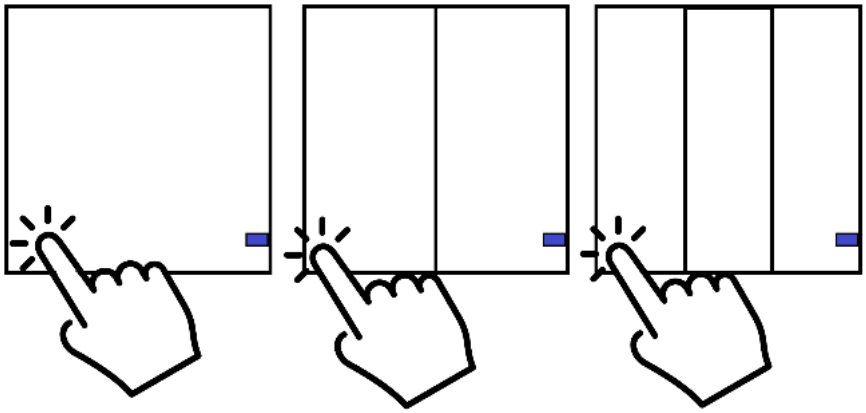
- To test the switch, press the yellow *TEST* button and the switch will disengage and open the circuit.
- To reset the switch after it has tripped or been tested, push the lever up into the on (I) position.

Fig. 7

Wireless light Switches

The main light switches in your caravan are battery powered wireless type. To pair a switch that no longer connects to the receiver:

- Press and hold the switch as shown below for your switch type and hold for 2 seconds.
  When the indicator light flashes it enters matching code mode, then remove your finger.
- Press the switch you want to pair, Use the switch to indicate pairing is successful by turning lights on and off.



240VAC Service and Isolation

Located inside 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.

Water Level Gauge

This gauge will indicate the level of each tank and will be marked as to the corresponding tank for each indicator.

Note: The sensors are not a float and will display the tank level incrementally. To turn off or activate the display, press the centre button. The gauge will read when the water pump main switch is on.

Hot Water System Control

Fig 23b

a = Red indicator lamp “Fault”
b = Water heater “On” 60 °C or 70 °C
c = Water heater “Off”

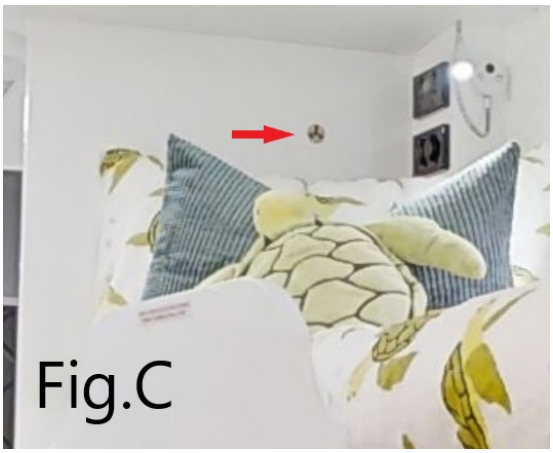
Interior Features & Operation

Living Area Setup

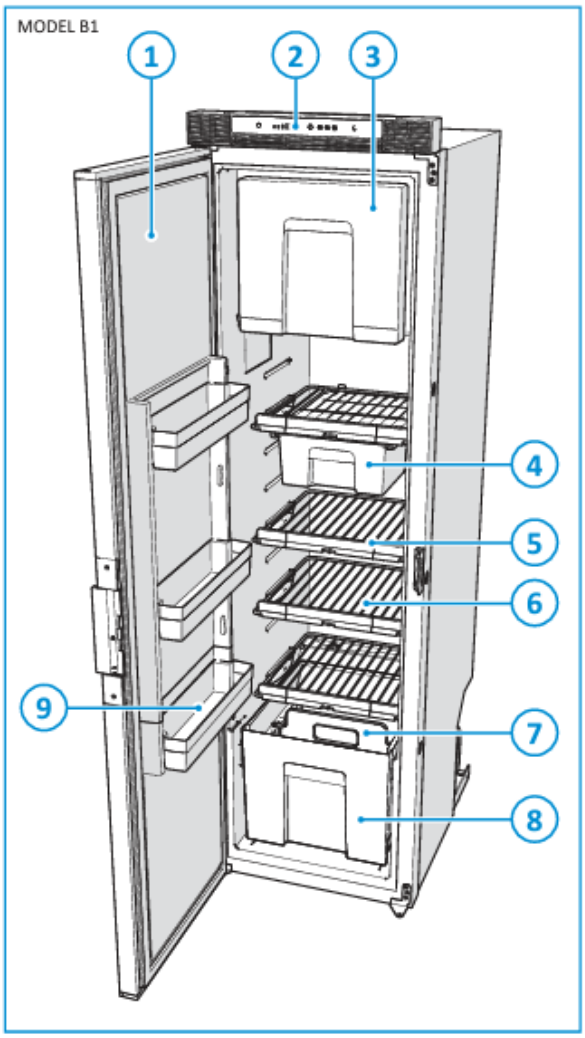
Bunk Bed XT17HRT+

The top bunk can be raised up to use the bottom bunk as a day lounge.

1. Release the sprung pad bolt Fig B
2. Raise the bunk and insert pad bolt into receiver Fig C

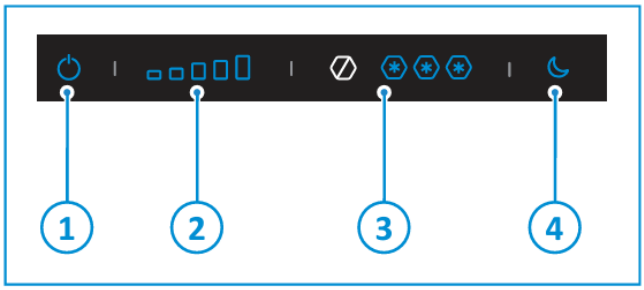


Appliances
Refrigerators
XT17HRT+ Thetford T2152C



1. Refrigerator door
2. Control panel
3. Frozen food compartment door
4. Slide-out box
5. Shelf food retainer
6. Storage shelves
7. Drawer divider
8. Bottle and vegetable bin
9. Door bins

Fridge Control Panel



1. On/off button
2. Temperature settings - fresh food compartment
3. Temperature settings - frozen food compartment (not for model A and B3)
4. Night mode button

Before use

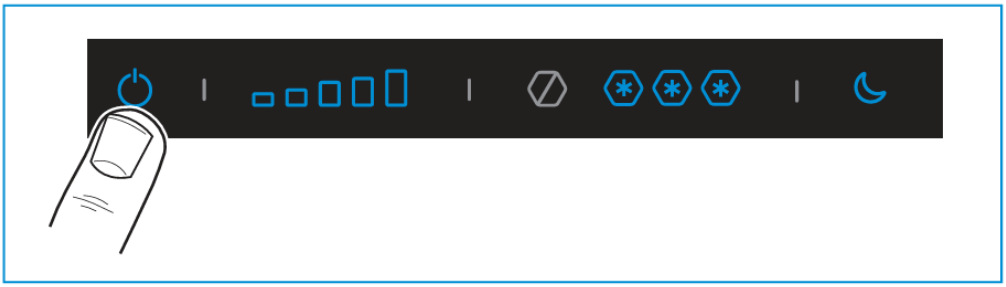
Before using the appliance:

- Ensure that all packaging materials have been removed.
- Clean the inside of the refrigerator properly with warm water and household detergent and dry carefully with a soft cloth.
- Ensure that the DC electricity supply is connected and turned on.

Switching on the refrigerator

To switch on the refrigerator:

- Push the on/off button and hold it for a few seconds.



After a few seconds the control panel will change to stand-by and locked mode. The blue on/off button indicates the refrigerator is still in function.

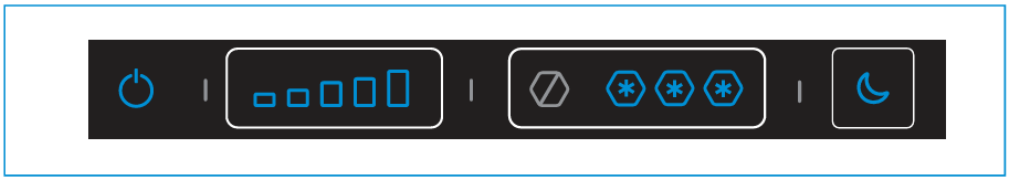
To switch off the refrigerator, push and hold the on/off button for a few seconds.

For optimal performance, switch on the refrigerator 4 hours before placing food.

Selecting cooling level

To select the cooling level:

- First unlock the control panel, if applicable. Press the fresh food, frozen food or night mode area and hold it for a few seconds until the icons start blinking.



- Slide or press the temperature icons to select the desired cooling level.
- After a few seconds, the control panel will save the settings and go to the locked stand-by mode.
- When display is locked, the icons will turn off, only on/off and night mode will stay illuminated.

When display is locked, the icons will turn off, only on/off and night mode will stay illuminated.

Cooling levels (1 to 5) of fresh food compartment

Cooling levels (1 to 3) of frozen food compartment (not for model A)

Off (below 20°C)

- Press and hold for a few seconds. When using the off setting, the energy consumption will be considerably less. This mode can be used to maximize off-grid time.

Lowest setting

- When using the lowest setting the temperature in the compartment is around -6°C. This mode is suited for making ice cubes, for example. Also, this mode saves energy compared to the higher settings.

Highest setting

- When using the highest setting the frozen food compartment is suited for keeping products frozen for a long period of time. Please refer to the information on the frozen food package. Also this mode is advised when storing ice cream products. The temperature is around -18°C. This setting uses the most amount of energy.

Thetford advises to set the fresh food compartment on cooling level 3, with an ambient temperature between 16°C and 25°C. A higher temperature needs a higher cooling level, a lower temperature a lower level.

Thetford advises to set the frozen food compartment on cooling level 3. A lower setting is only needed to reduce the energy consumption.

Always look at the packaging instructions of your food products for preservation level.

Active running time of the refrigerator depends on the temperature, size and state of the battery, electrical load of other devices in the vehicle, content of the refrigerator and frequency of use.

When the vehicle is exposed to full sun light, it is strongly recommended to apply proper ventilation in the vehicle.

Washing Machine

Important Safeguards

- Do not plug or unplug machine with wet hands
- Isolate from power before any maintenance or cleaning
- Do NOT spill water directly onto front panel
- When washing on high temperature, the door glass will become hot. Do not touch and keep children away from the machine.
- When washing on high temperature, allow the machine to cool before opening the door.
- Do not put heavy objects in the washing machine.
- Do NOT wash waterproof textiles, such as raincoats, down products, sleeping bags etc.
- Only wash machine washable items. If in doubt, refer to washing guide on clothes tag.
- Do not wash clothes contaminated by flammable liquids or materials.

Washing Instructions

NOTE: When using for the first time, it is recommended to do a high temperature wash without clothes to clean the tub.

Preparing to wash

1. Ensure 240v power is activated to the GPO's in the caravan.
2. Turn on the water pump at the main control panel.
3. Place clothes in the washer tub.
4. Add detergent

Starting The Washing Machine

Load Ratings for Wash Programs

Program	Max Load KG	Clothes Type
Mix	Rated	Cotton fabrics/polyester
18'Quick	≤1.5kg	Cotton fabrics/polyester
Gentle	≤1.5kg	Cotton fabrics/polyester
Baby Care	Rated	Infant Cotton Fabric
Steam Wash	Rated	Infant Cotton Fabric
Rinse	Rated	Cotton fabrics/polyester
Spin	Rated	Cotton fabrics/polyester
Drum Clean		Washing Machine cleaning & Sanitising

1. During the operation of some programs, the actual displayed time may jump due to the perceived weight of clothes, which is not a washing machine fault.
2. The time required will change when the water pressure, drainage conditions, clothing material, clothing weight and water temperature change.
3. The weight of clothes and the type of detergent may lead to the reduction of spinning speed. If the spinning speed is too low, poor rinsing effect may occur. Please increase the rinsing times.
4. Power on again after power failure, and the washing machine will continue to operate at the time node before power failure.

Control Panel

- "PROGRAM" BUTTON - Select the appropriate program
- "START/PAUSE" BUTTON – Pres this button to start the machine or stop the machine temporarily during the wash cycle.
  CAUTION: When the washing machine is running at high temperature or the water level is higher than the bucket mouth, the midway filling option does not respond.

For further information, read the washing machine owner manual provided with your caravan.

Repairs may only be carried out by an expert!

To avoid transportation damage, the device may only be sent to the Truma Service Centre if agreed beforehand. The power supply must be disconnected from the mains (all poles) before opening the housing.

The device fuses and connection cables must only be replaced by experts.

The 230 V, T 6.3 A H (slow) device fuse can be found on the electronic control unit in the device and must always be replaced with an identical fuse.

The air conditioning system is designed for a power consumption of up to 4.2 A. You should still check whether the camp site has adequate fuse protection (min. 6 A) before starting the equipment up.

Park the vehicle in the shade if possible.

Darkening with blinds reduces the amount of heat insolation. Clean your roof at regular intervals (dirty roofs heat up more than clean roofs).

Ventilate your vehicle well before starting the equipment in order to remove accumulated warm air from the vehicle.

In order to obtain a healthy room climate, the difference between the inside and outside temperatures should not be too great. The recirculated air is cleaned and dried during operation. A pleasant room climate is produced by drying the moist air, even with small temperature differences.

Keep all doors and windows closed when in cooling mode so that no condensation buildup occurs at the air distributor.

For faster cooling or heating:

–Set fan level to high,

–Set front / rear air distribution to centre position,

–Set floor / ceiling air distribution to ceiling.

Prior to Starting Aircon

Switches in Fig 10 and Fig 11 Must be turned on.

Inverter must be turned on or caravan connected to shore power.

Fig 10

Fig 11

The symbols in the display are visible depending on the settings.

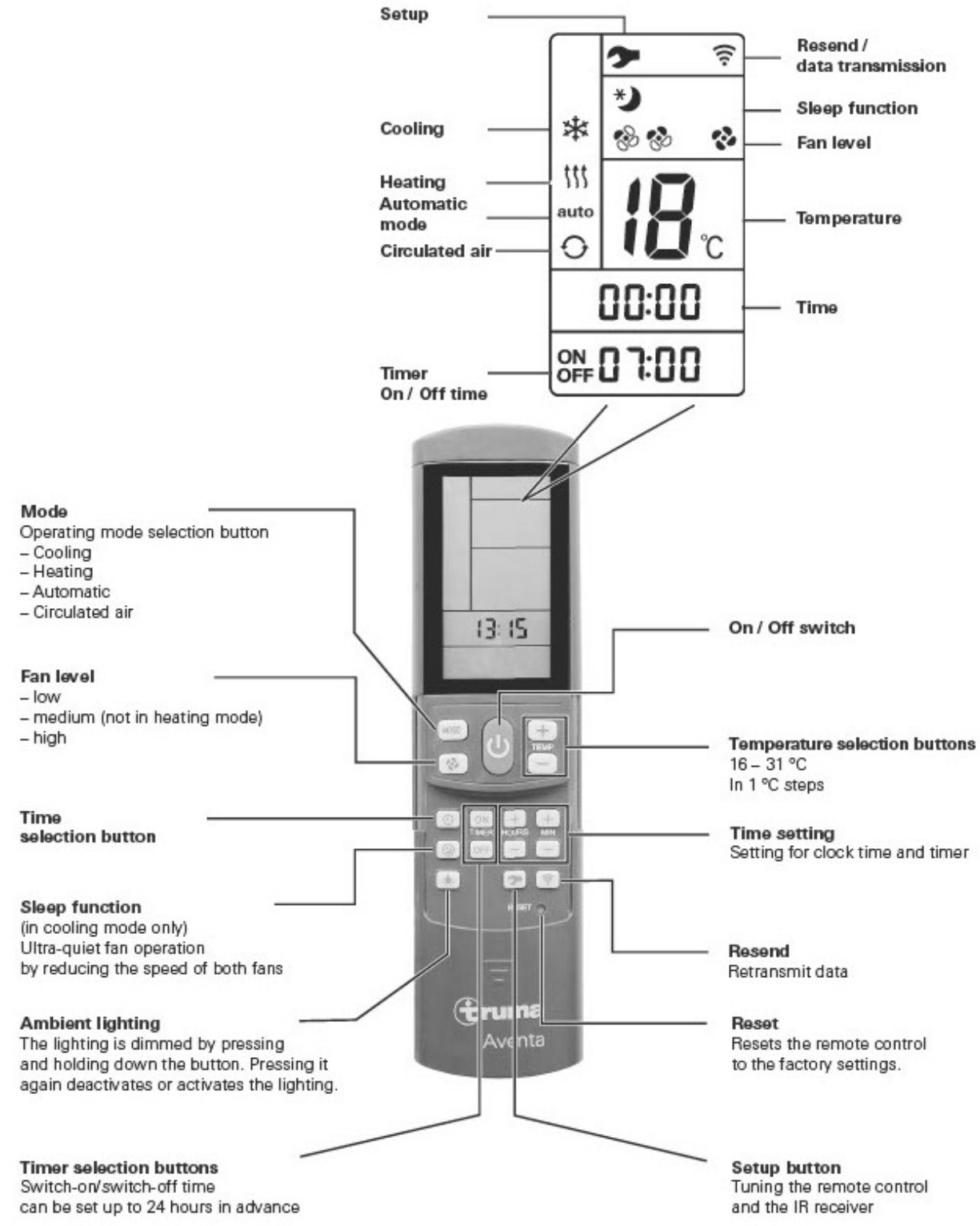


Fig. 1

Start-up

Before switching on, be sure to check that the camp site power supply fusing is sufficient (230 V).

 To prevent the power cable of the recreational vehicle from overheating (minimum cross-section 3 x 2.5 mm²) the cable drum must be fully unwound when used or cable laid out side by side. Do NOT coil the power lead.

The remote control must always be pointed at the infra-red receiver in order to perform the individual switching commands.

Before switching on for the first time, the remote control must be tuned to the IR receiver.
– Insert batteries (pay attention to polarity)
– Setup symbol flashes (if symbol does not flash, perform Reset)
– Point remote control at IR receiver
– Press Setup button and hold down
– When the red LED on the IR receiver starts to flash, release Setup button.

The remote control is tuned to the IR receiver, the setup symbol goes out and the air conditioning system starts in circulated air mode on the lowest fan level, with no timer set.

Switching on

Switch on the air conditioning system using the **"On/Off switch"** of the remote control. The previous settings are taken over.

 The circulated air fan runs after switching on. The compressor activates itself after no more than 3 minutes and the blue (cooling) / yellow (heating) LED flashes.

Temperature

If necessary, use the **"Temperature selection buttons"** to set the required room temperature with **"+"** and **"–"**.

Mode

Select the required operating mode by pressing the "MODE" button one or more times.
– Cooling
– Heating
– Automatic (cooling or heating mode, depending on the room temperature selected)
– Circulated air

When the room temperature that was selected using the remote control is reached in **cooling mode**, the compressor switches off and the blue LED in the IR receiver goes off. The circulated air fan continues to run in order to provide ventilation. If the room temperature setting is exceeded, the device automatically reverts to cooling mode.

 The air is dehumidified during cooling. If the air humidity in the vehicle is extremely high at the beginning of the cooling procedure, moisture can build up on the underside of the air distributor. The doors and windows should therefore be kept closed and the highest fan level selected.

When the room temperature selected using the remote control is reached in heating mode, the compressor switches off and the yellow LED lamp in the IR receiver goes off. The circulated air fan continues to run in order to provide ventilation. If the room temperature falls below the temperature selected, the device automatically reverts to heating mode.

Heating at an outside temperature of less than 4°C is not possible because heating performance falls considerably. Between 4°C and 7°C the device switches briefly to defrosting processes. At above 7°C there are no restrictions on heating mode.

In **automatic mode**, cooling or heating mode and fan level are selected automatically according to the room temperature.

In **circulated air mode** the interior air is recirculated and cleaned by the filter. No LED's illuminate in the IR receiver.

Fan

Select the required fan level by pressing the **"Fan level"** button one or more times.

Fan level (not functional in automatic mode):
– low
– medium (not in heating mode)
– high

Sleep function

In **"sleep function"** (cooling mode only), the internal and external fans operate at slow speed and are therefore extremely quiet.

Switching off

To switch off, press the **"On/Off switch"** on the remote control. The remote control and the device are switched off. The light can still be switched on and off using the **"Ambient lighting"** button.

If the air conditioning system is switched on again, the blue / yellow LED flashes. The air circulation fan runs, and the compressor activates itself after no more than 3 minutes.

Time

Press "Time selection button" and set current time using the "Time setting" buttons.

The time is always shown on the display (exception with ON / OFF timer).

The time must be reset after changing the batteries or after a daylight saving time change.

Timer ON / OFF

With the integrated timer the On/Off time of the air conditioning system can be set in advance for a minimum of 15 minutes to a maximum of 24 hours, starting from the current time.

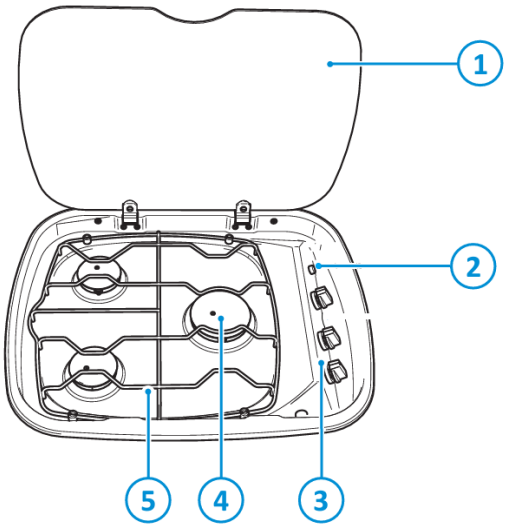
The device must be switched on using the remote control in order to program it.

Set required operating mode and room temperature. Then select TIMER ON or TIMER OFF using the **"TIMER selection buttons"**. Set the required On/Off time using the **"Time setting"** buttons (15 minutes to 24 hours) and **confirm** with TIMER ON and TIMER OFF.

Pressing the relevant timer button again deactivates the timer function.

Ambient lighting

Irrespective of whether the air conditioning system is operating, the lighting in the air distributor can be switched on or off by pressing the **"Ambient lighting"** button. The lighting is dimmed by pressing and holding down the **"Ambient lighting"** button. The previous setting is activated when it is switched on again.



1. Lid
2. Control Panel
3. Spark Ignition
4. Gas Burners
5. Pan Supports

Thetford Triplex MK3 Oven/Grill

Burner Operation

The burners on this appliance have fixed aeration and no adjustment is required. The burners should flame as follows:

- Universal LPG - Normally on lighting the flames may have yellow tips and this increases slightly as the burner heats up.

NOTICE

• Although each burner will support pans from 10 to 22cm, care should be taken not to overload the appliance as reduced performance may result.

• When using small pans, the flames should not spread beyond the base of the pan as this will reduce the efficiency of the burner.

• Avoid old or misshapen pans as these may cause instability.

• The lid must be opened fully prior to using the hotplate burners.

1. **Using the Hob Burners**
   Ensure gas cylinder/supply is connected and turned on. In the event of a gas smell turn off at gas cylinder/mains and contact the supplier.
2. **Flame supervision:** Each burner is controlled individually and is monitored by a thermocouple probe. In the event of the burner flames being accidentally extinguished, turn off the burner control and do not attempt to re-ignite the burner for at least one minute.
3. **To light:** Push in the control knob and turn to full rate – large flame ( ). Hold a lighted match or taper to the burner and push the control knob in and hold. It is necessary to hold the knob depressed after the burner has ignited for approximately 10 - 15 seconds, to allow the thermocouple probe to reach temperature, before releasing the knob. Should the flame go out when the knob is released, the procedure should be repeated holding the knob depressed for slightly longer.
4. For models fitted with Spark Ignition the procedure is similar except that the burner can be ignited by depressing the ignition button, which is located on the fascia. If the burner has not lit within 15 seconds

the control knob should be released and the burner left for at least 1 minute before a further attempt to ignite the burner.

5. For simmering, turn the knob further anti-clockwise to the low rate position.
6. To turn off: Turn the control knob until the line on the control knob is aligned with the dot on the control panel. Always make sure the control knob is in the off position when you have finished using the hotplate burners.

- Glass lids may shatter when heated. Turn off the hotplate and allow it to cool before closing the glass lid.
- Remove all spillage from the surface of the glass lid before opening.

Using the Grill

1. Ensure gas cylinder/supply is connected and turned on. In the event of a gas smell turn off at gas cylinder/mains and contact supplier.

2. To light: Open door, push in the control knob and turn clockwise to full rate, large flame (Hold a lighted match or taper to the burner and push the control knob in and hold. The burner should ignite, and the control knob should be held in for 10 -15 seconds before release. If the burner goes out, repeat procedure holding control knob for slightly longer.).

3. For models fitted with Spark Ignition the procedure is similar except that the burner can be ignited by depressing the ignition button, which is located on the fascia. Ignition must be carried out with the door open, and if the burner has not lit within 15 seconds the control knob should be released and the grill left for at least 1 minute before a further attempt to ignite the burner.

4. On first use of the grill, it should be heated for about 20 minutes to eliminate any residual factory lubricants that might impart unpleasant smells to the food being cooked. A non-toxic smoke may occur when using for the first time so open any windows and turn on mechanical ventilators to help remove the smoke.

5. Although the grill does heat up quickly, it is recommended that a few minutes preheat be allowed.

6. Flame Failure Device (FFD): the grill burner is fitted with a flame sensing probe, which will automatically cut off the gas supply in the event of the flame going out. In the event of the burner flames being accidentally extinguished, turn off the burner control and do not attempt to re-ignite the burner for at least one minute.

7. It is normal for the flames on this burner to develop yellow tips as it heats up.

8. A reversible grill pan trivet enables the correct grilling height to be achieved.

9. To turn off: turn the control knob until the line on the control knob is aligned with the dot on the control panel. Always make sure the control knob is in the off position when you have finished grilling.

• The grill MUST only be used with the door open.

• The heat deflector below the fascia should be pulled out prior to lighting the grill.

• Never adjust the heat deflector position without using hand protection – i.e. oven gloves.

• The control tap on this appliance operates both the Grill and Oven burners. To ensure safe operation it is not possible to operate both burners at the same time.

• The pan supplied with the appliance is multi-functional, for use in grill or oven.

• The handle can be removed or inserted whilst the pan is in use.

• Always remove the handle when the pan is in use.

Using the Oven

1. Ensure gas cylinder/supply is connected and turned on. In the event of a gas smell turn off at gas cylinder/mains and contact the supplier.
   2. To light the oven: Open door, push in the control knob and turn to full rate (Gas Mark 9, 240°C). Hold a lighted match or taper to the burner and push the control knob in and hold. The burner should ignite, and the control knob should be held in for 10 -15 seconds before release. If the burner goes out, repeat procedure holding control knob for slightly longer.
   3. For models fitted with Spark Ignition the procedure is similar except that the burner can be ignited by depressing the ignition button located on the fascia. Ignition must be carried out with the door open, and if the burner has not lit within 15 seconds the control knob should be released and the oven left for at least 1 minute before a further attempt to ignite the burner.
   4. Place the oven shelf in the required position and close the door.
   5. Although the oven does heat up quickly, it is recommended that 10 minutes preheat be allowed. The oven should be up to full temperature in about 15-20mins.
   6. To turn off: turn the control knob until the line on the control knob is aligned with the dot on the control panel. 7. Shelf: The shelf has been designed to allow good circulation at the rear of the oven. A raised bar at the rear of the shelf prevents trays or dishes contacting the back of the oven. To remove a shelf, pull forward until it stops, raise at front and remove.

   Oven Temperature Control

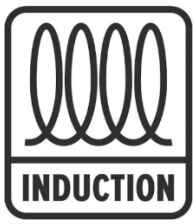
   The temperature in the oven is controlled by a thermostatic gas tap and is variable over the range 130°C to 240°C. Approximate temperatures for the settings on the control knob are shown in the table below. The temperatures indicated refer to the centre of the oven and at any setting the oven will be hotter at the top and cooler towards the base. The variation between top and centre, and centre to bottom is approximately equivalent to one gas mark. Good use can be made of the temperature variation in several dishes requiring different temperatures may be cooked at the same time. In this way maximum benefit can be obtained from the gas used to heat the oven. Care should be taken not to overload the oven, allow adequate spacing to ensure free circulation of heat. When roasting with aluminium foil ensure the foil does not impair circulation of heat or block any oven flue outlet.

⚠ CAUTION

- Do NOT spray aerosols in the vicinity of this appliance when in use.
- Do NOT use or store flammable materials in or near this appliance
- Do NOT place articles on or against the appliance.
- Do NOT modify this appliance
- Children 8 years and older and persons with reduced capacity may only use this appliance under supervision.
- Keep children under 8yrs away from appliance.
- Do NOT allow children to play with this appliance
- Use ONLY for cooking, do NOT use for space heating as this can lead to carbon monoxide poisoning.
- Ensure door and roof vents are open and unrestricted while using this appliance.
- Surface may be hot to touch.
- Do NOT close glass lid while burners are lit or while pan supports are still hot.

Portable Induction Cooktop

Use ONLY Flat-bottomed pots or pans with or made from Magnetic Stainless Steel, Cast Iron, Enamelled Iron, and Nickel. Always look for the INDUCTION label on cookware.



Diesel Heater

The diesel heater is the European brand Autoterm. To operate the diesel heater you must follow these steps.

CAUTION

- Do not use or install the heater in places, where flammable vapors or gases or large amounts of dust may form and accumulate.
- Disable the heater when the vehicle or vessel is being fuelled.
- 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.
- The vehicle where the heater is installed must be equipped with a fire extinguisher.

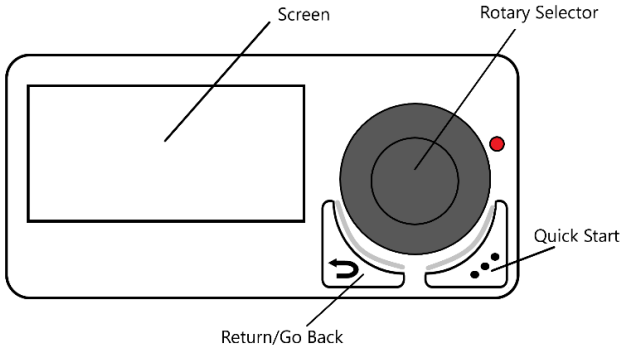
CAUTION

- 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 made on the heater, the heater must be disconnected from the battery.
- Do not use fuses rated differently from indicated on the electric circuit diagram.
- Disconnect the heater from its battery during repair works on the heater.

Important Information

- 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.
- **To ensure reliable operation of the heater, switch it on once a month for 20 minutes on full power, including the warm seasons of the year, when the heater is out of operation. This action is necessary to remove any viscous film sediments on moving parts of the fuel pump. Failure to do so may lead to premature failure of the heater**.

Control Panel

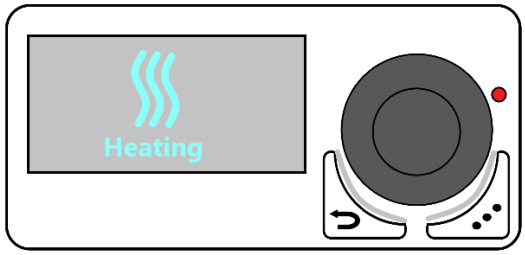


Starting

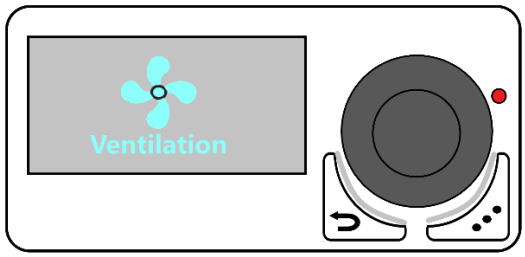
- To start the heater using the previous settings, press and hold the quick start button for 2 seconds.
- To start the heater and use the rotary selector for menu option, press the rotary selector for 2 seconds.

Modes:

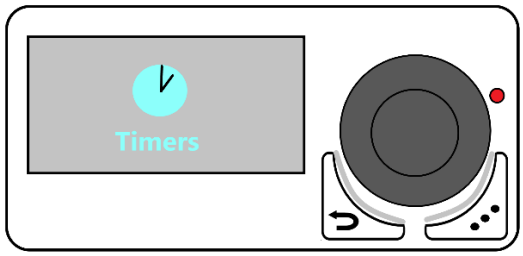
Heating: Gor heating the caravan.



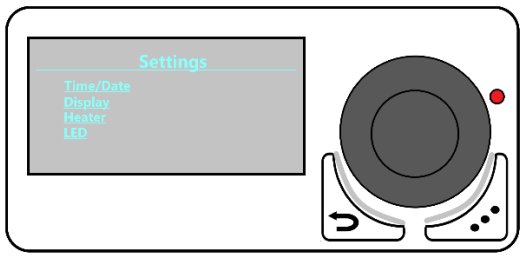
Ventilation: To move air through the caravan



Timers: To set start and stop times



Settings: To access heater settings



Hot Water System

Fig 23b

a = Red indicator lamp “Fault”
b = Water heater “On” 60 °C or 70 °C
c = Water heater “Off”

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.

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.

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.

How to Load Your Caravan

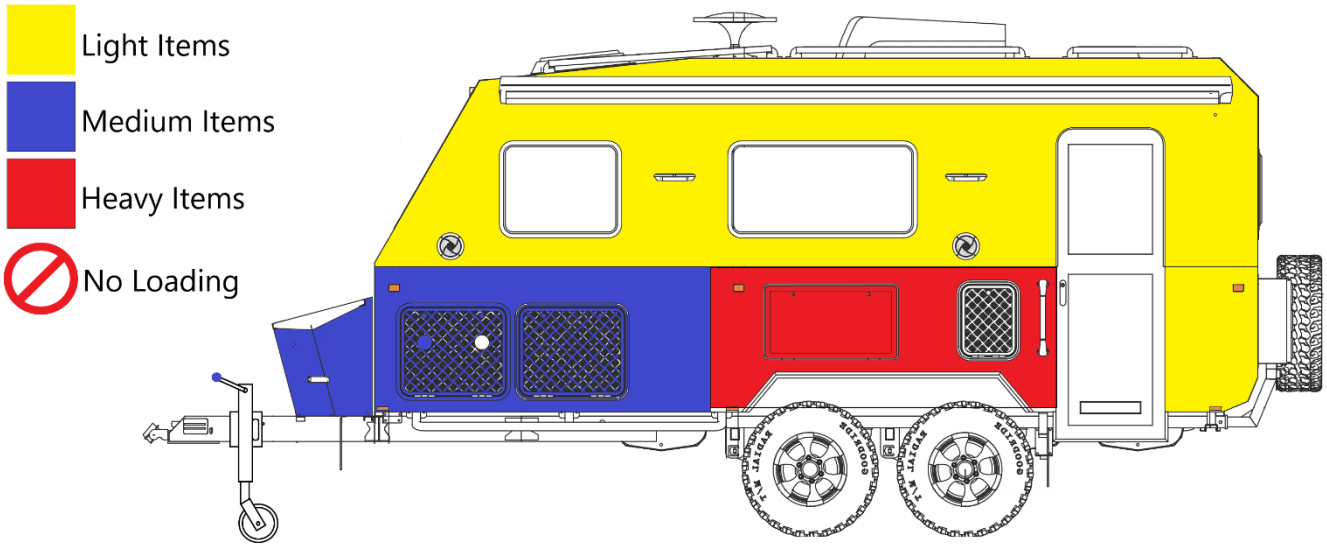
It is important to load your caravan correctly to distribute weight evenly and achieve a suitable ball weight load and prevent loading in a manner that can cause a Caravan to sway and/or roll excessively left and right. The industry optimum ball weight on a caravan is between 9 and 11% of the total Caravan weight. AusRV 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 Dual Axle	Pressure Kpa Dual Axle
2600kg	30psi	208Kpa
2700kg	31psi	216Kpa
2800kg	33psi	224Kpa
2900kg	34psi	232Kpa
3000kg	35psi	240Kpa
3100kg	36psi	248Kpa
3200kg	37psi	256Kpa
3300kg	39psi	264Kpa
3400kg	39psi	272Kpa
3500kg	41psi	280Kpa

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 system is awake and in normal operation.

Lights

- Ensure all trailer lights are functioning.

Setting Up the Caravan

Finding a Suitable Spot

When choosing a spot to set up your caravan, start with a flat area with no overhanging trees. Birds and bats occupying trees can defecate leaving droppings on your caravan that can damage paint and leaves and sap can also stain the coating. Ensure you are not camping in an area prone to flooding or with bad drainage in the event of rain. Even the slightest hollow in the ground can put you in a mini lake. In hot weather, if possible, set your caravan up so the sun's arc goes from front to back or back to front with the annex/awning in the general direction the sun is arcing across. Doing this will keep the bulk of the caravan in shade and the inside cooler as it will be shaded by the awning.

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

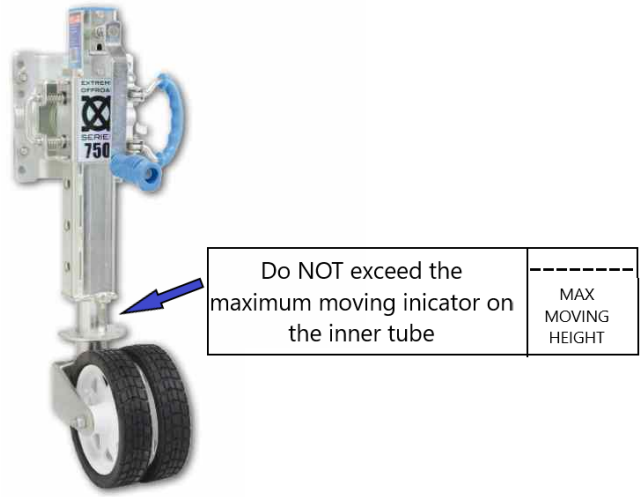
Using Wheel Chocks and Ramps

WARNING Always use wheel chocks to prevent the trailer from moving when unhitched.

The stabiliser legs on your caravan are not designed for supporting the full weight of the trailer, they are there to stabilise it once it is level. Using your stabilisers as a lifting mechanism will void your warranty as will extending them with a “rattle gun” or “impact wrench”. Levelling front to back can be done by raising and lowering the jockey wheel prior to adjusting the stabiliser legs. Getting the trailer level from left to right should be done with drive on stepped ramps as illustrated below. Once levelled the legs can be lowered to keep the trailer stable. On soft ground you may want to use timber sole boards under the stabiliser feet.

Operating the Jockey Wheel

The rated load capacity of a jockey wheel is achieved when the jockey wheel is retracted to its lowest position. 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

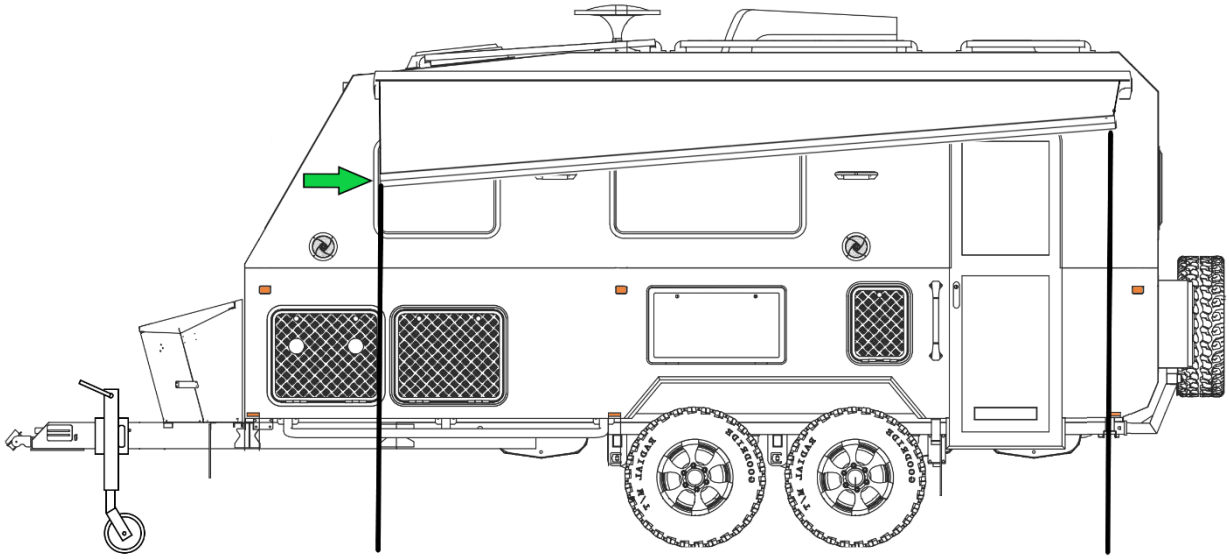
Stabiliser legs are installed to stabilise the caravan or camper when setup. Stabiliser legs should never be used to jack a trailer as they are comprised of small bevel gears held in place by small roll pins that will break if overloaded. Stabilisers are best set vertical or 90 degrees to the chassis where possible. When set and 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. When used as an awning only with no annex setup, it is only suitable for mild weather conditions and should be packed away in high winds. During rain one side must be lowered to prevent water pooling which can damage the awning.

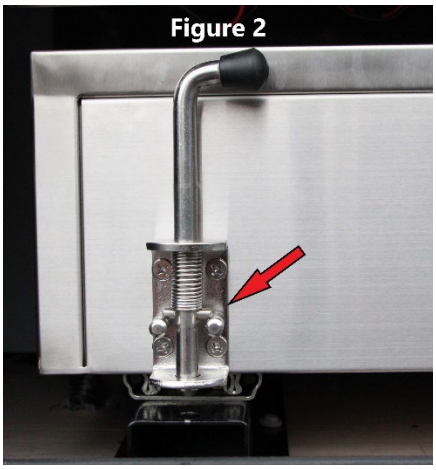
When set up as an annex, the awning has a higher tolerance to wind however should still be packed up prior to strong winds and heavy storm conditions.

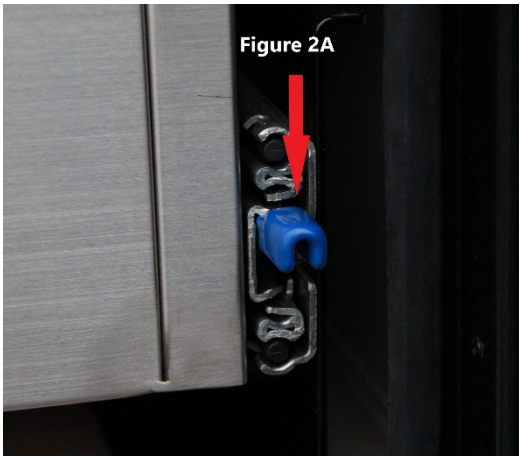
During rain, the awning should be lowered on one side as illustrated below.



Kitchen

Before sliding out kitchen, raise the pad bolt and turn to lock in the up position (Fig: 2)
Push down blue latch on the slide mechanism and pull kitchen out. (Fig: 2a)





When kitchen is extended fit the support leg into its receiver (Fig: 3)
Extend support leg and secure locking screw (Fig: 3a)

Fig: 3 Fig: 3a

Caution

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

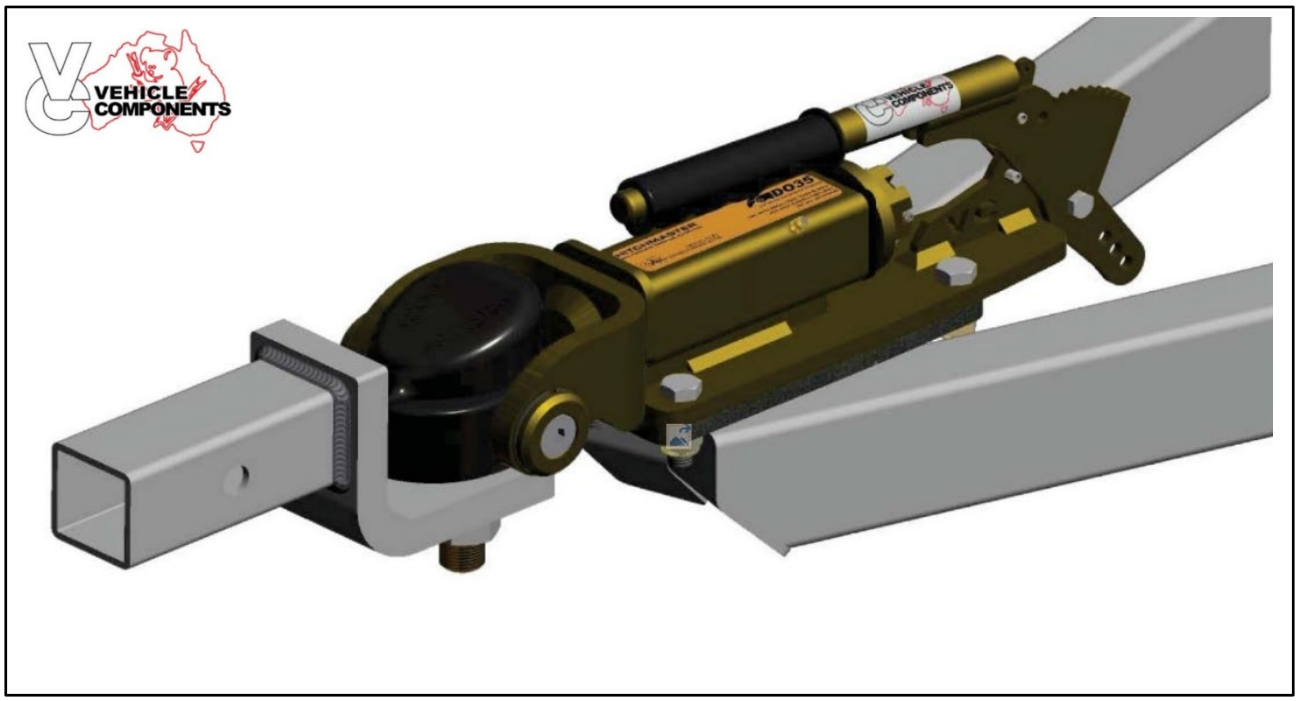
Towing The Caravan

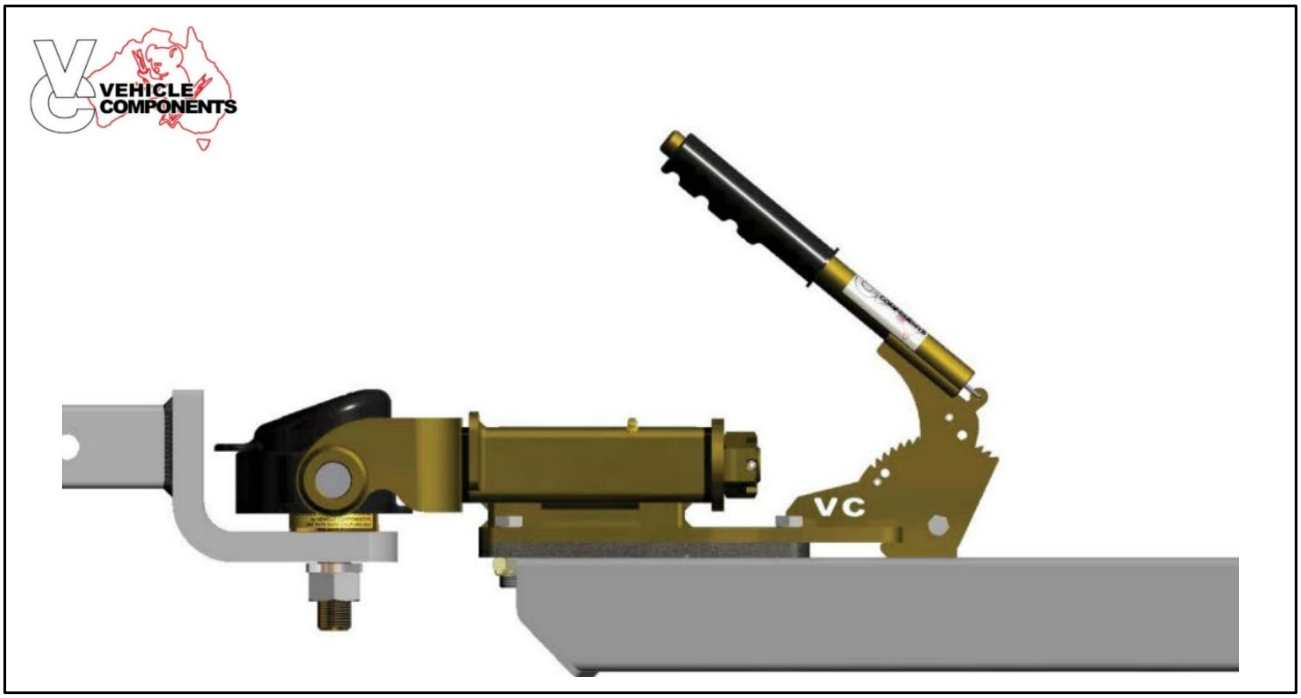
Towing with Trucks

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.

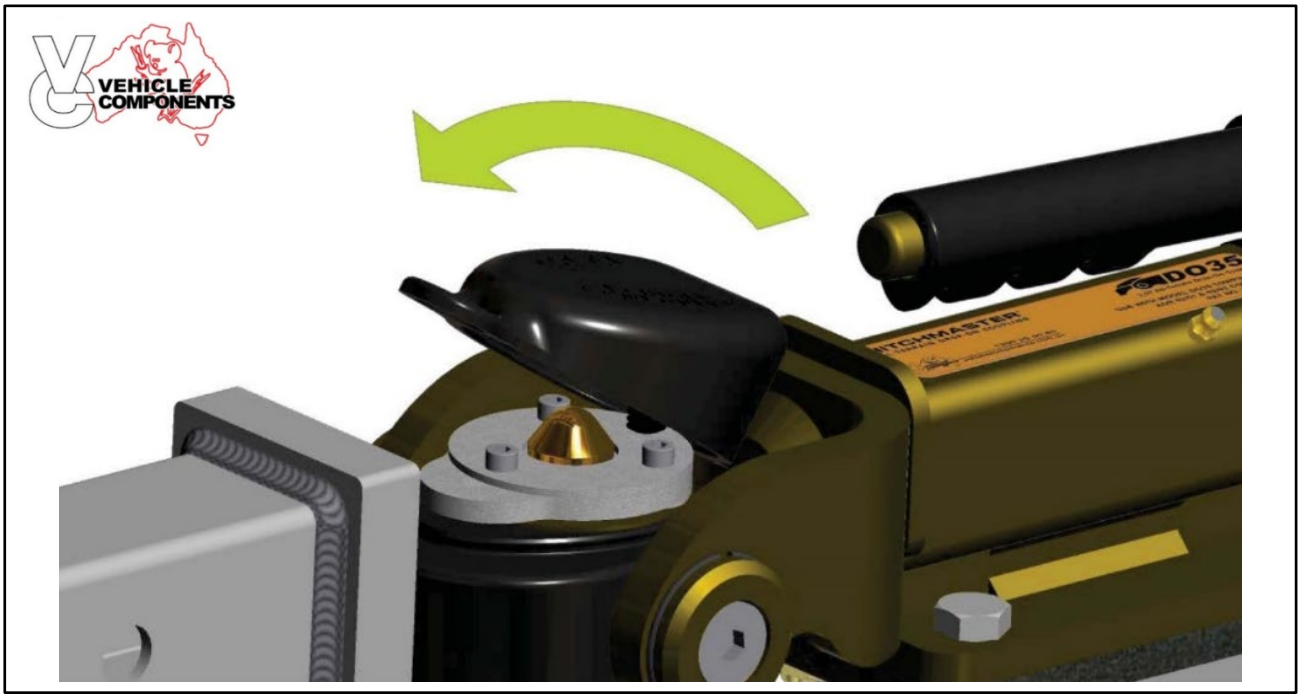
How to Hitch your coupling

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





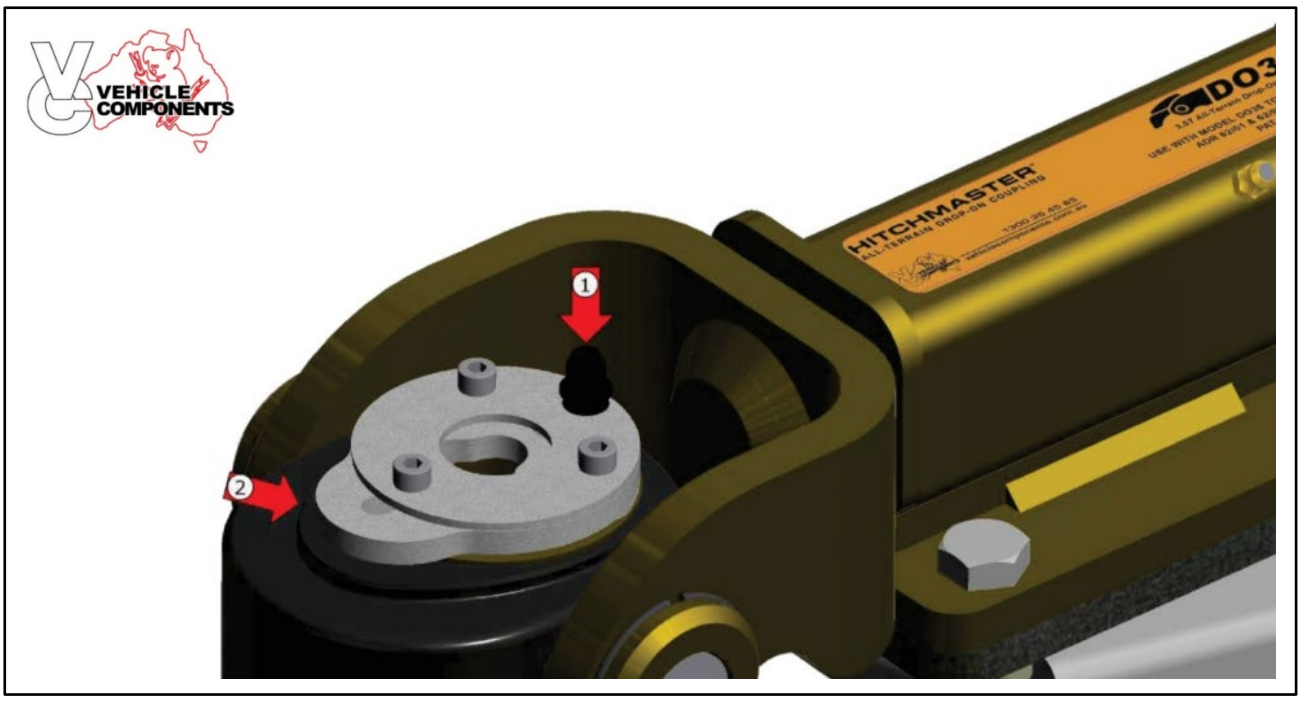
Make sure the handbrake is applied prior to coupling and uncoupling.



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.

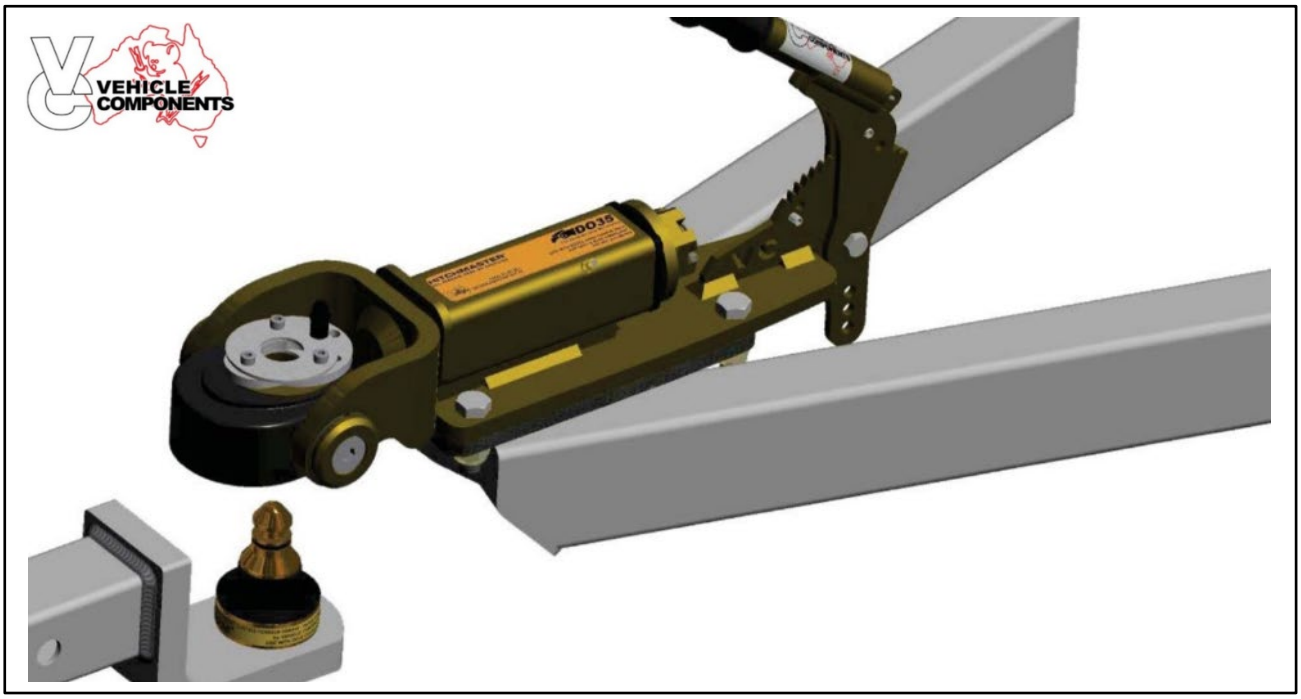
Coupling

STEP 1



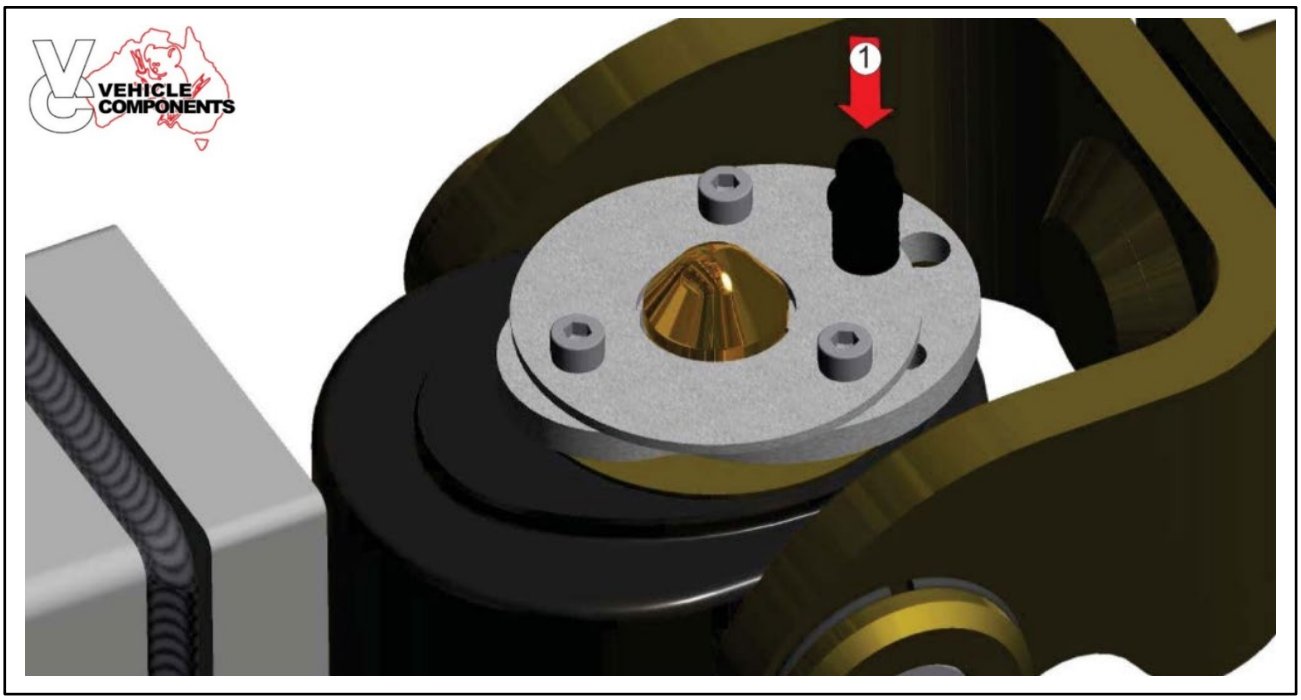
Push down the button (1) and push the locking mechanism back (2). When the locking mechanism (2) is all the way back, release the button (1) locking the plate in place

STEP 2

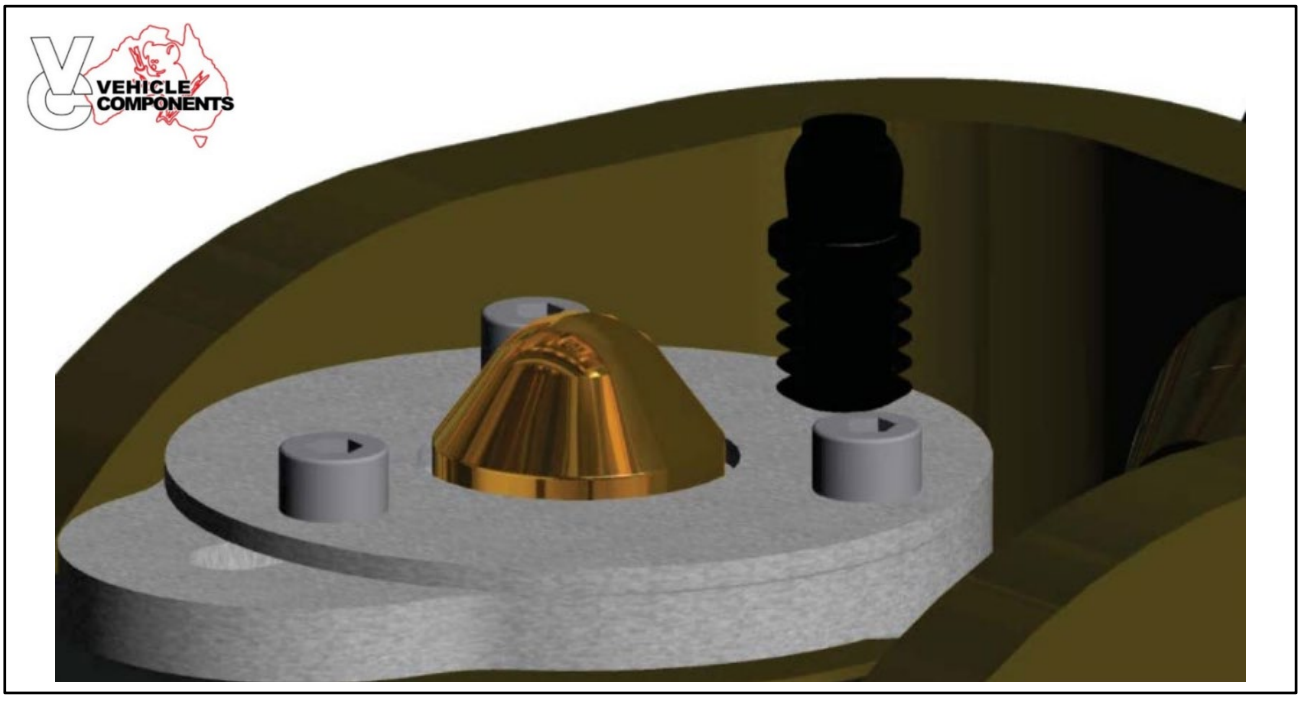


Offer up the tow pin to the coupling making sure the tow pin cover is removed and there is no visible debris on it. Locking plate should be in unlocked position as shown. Lower the coupling onto the tow pin.

STEP 3



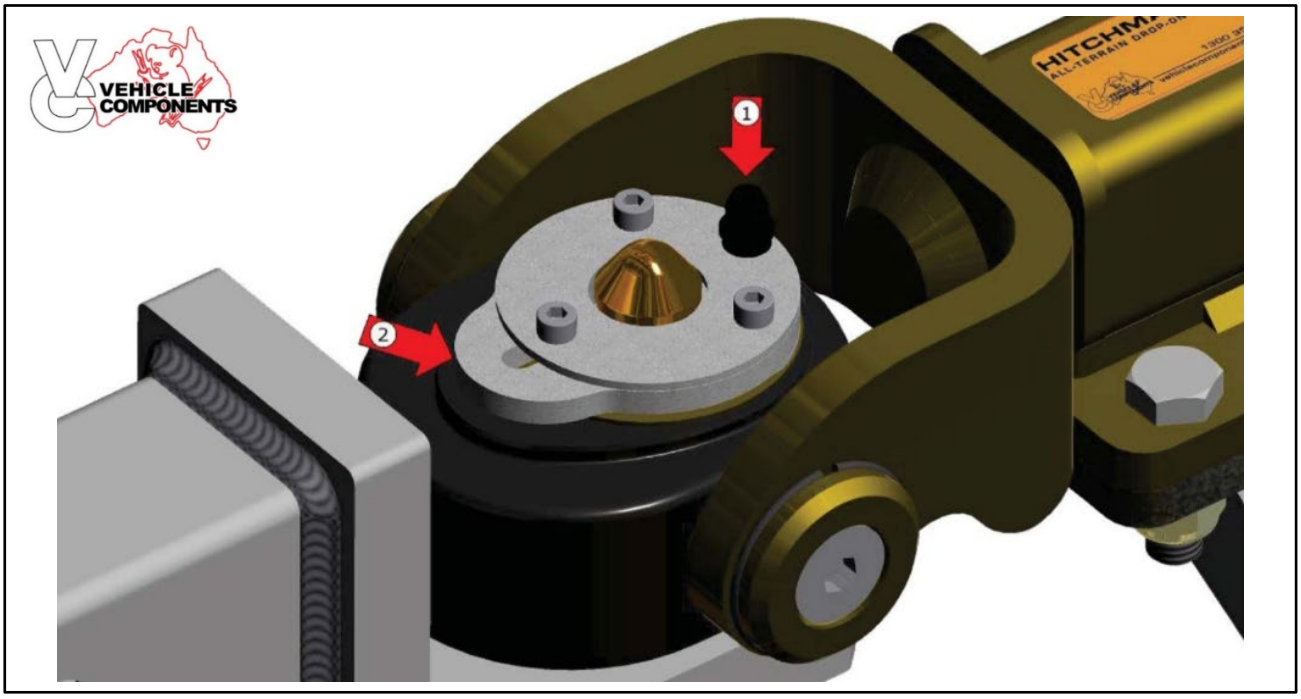
Make sure the tow pin is seated inside the universal and the tow pin top is sticking out of the locking mechanism (see below). Press the button (1) to release the locking mechanism there will be an audible locking noise at which point the mechanism will return to the initial position as shown in step 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.

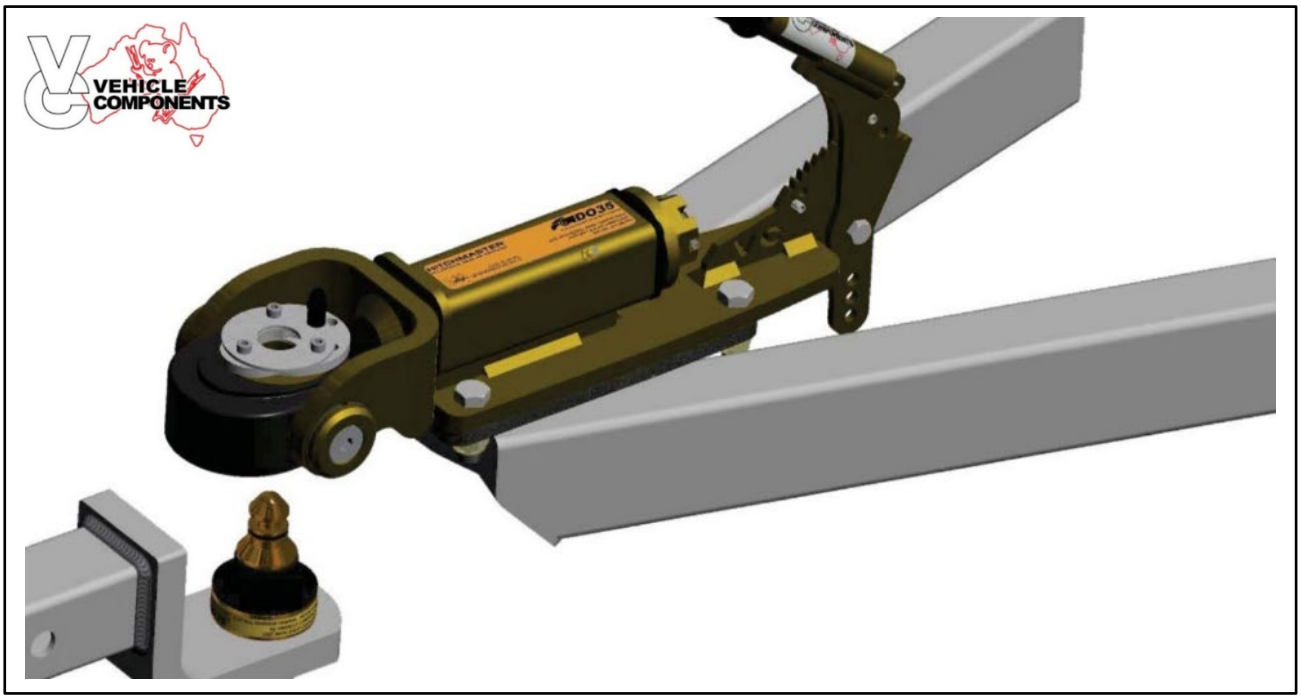
Uncoupling

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.

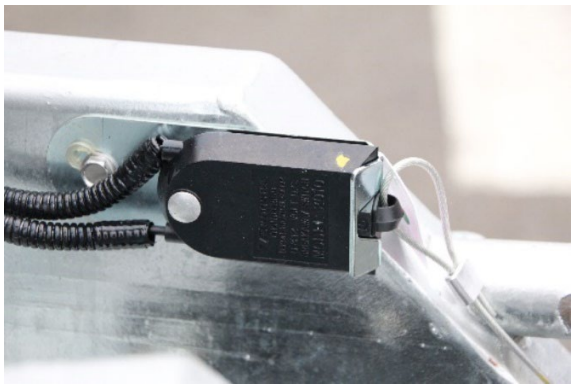
STEP 2



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.



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.

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.

Ensure the Electronic Stability Control System is awake and in normal mode.

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

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)

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

NOTICE

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 INVCHR2 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.

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
- Lower annex corner poles to create a pitch steep enough to allow all water on roof to run freely off the canvas. Do not allow water to pool.
- 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
- 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)

Z

Security

This 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:

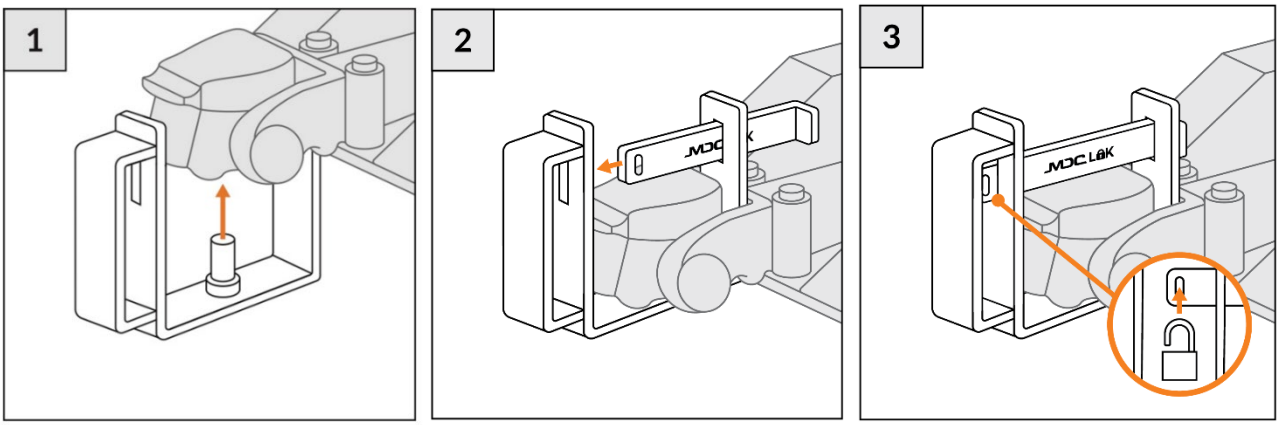
Cruisemaster DO-35 coupling.

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.

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.

Slide the bar into the slots provided.

Attach 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 oxidisation. The paint on your caravan should be waxed annually regardless of being kept under cover to protect the surfaces from oxidisation.

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.

Shade and screen care

- Do not close blinds while window is open. Air pressure can dislodge the blind material from its guide damaging it.
- Always open and close blinds and screens carefully and evenly with two hands ensuring screens and blind material feeds evenly through the guides.

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.

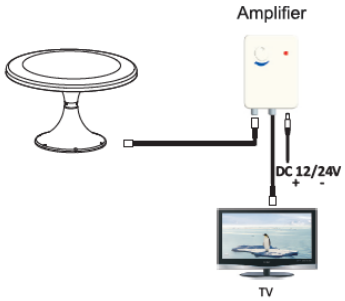
TV Antenna

All AUSRV MkII models come standard with a roof mounted 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.

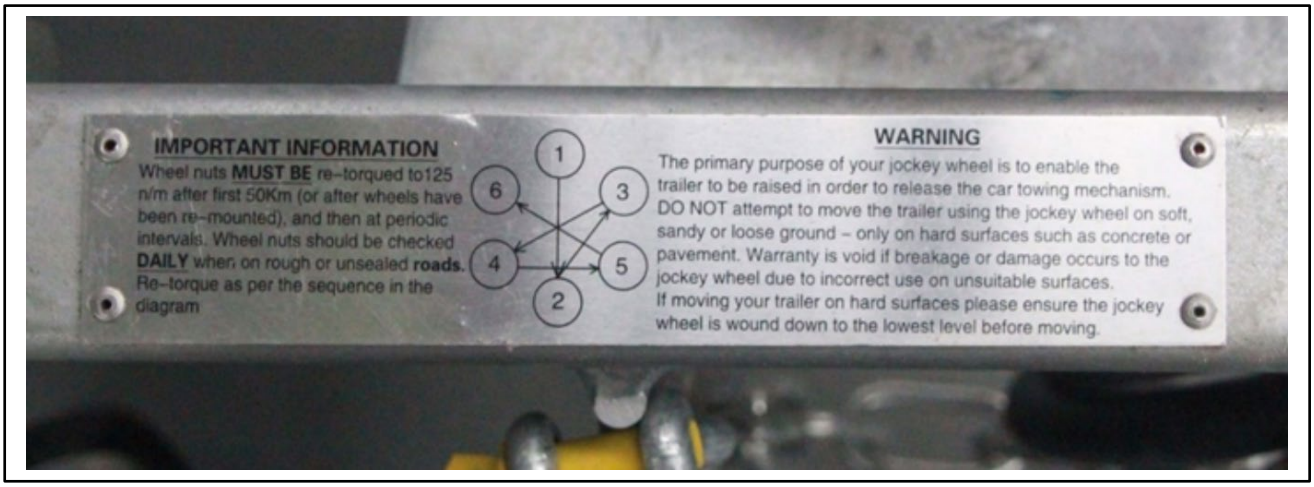
If there are local terrestrial signals (DVB-T, ISDB-T, DMB-T/H, ATSC) or AM radios, the antenna will receive them.

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.

Torque Settings

Wheel Nuts

Wheel nuts should be tightened to correct torque using a torque wrench. Never trust a “rattle gun” as these may over or under tighten. A quality torque wrench will ensure nuts are tightened correctly. It’s important to remember to check your wheel nuts when you first collect your caravan at 50km, 100km, 200km and 500km, before each trip and daily when travelling off road. The correct torque is 140nm for 14mm studs with alloy wheels and 200nm for 14mm studs with steel rims. Refer to the plate on your drawbar.



Hitch

The high tensile bolts securing your hitch should be tightened to 90Nm. These should be checked at 5000km intervals or 2500km in harsh off-road conditions.

Trailing Arm Pivot Bolts

The pivot bolts are a high tensile steel. The service interval for these bolts is 5000km under normal use and 2500km for harsh off-road conditions. During travel they should be inspected daily to ensure they have not rotated or become damaged. Correct torque is 190Nm

Hand Brake

Parking brakes are mechanically operated by cable means. The cable attachment occurs outside of the brake backing plate. Cable force applied to the parking lever creates a torque through the pivot pin and cam assembly. Torque transferred to the parking cam results in a spreading force between the primary and secondary shoes. The shoes in turn, move towards the drum until contact is made. Friction generated between the drum and lining contact surface results in parking brake capability.

Use the cable adjuster to give enough tension to be able to set the handbrake lever on the last two notches of the coupling or handbrake is 1/3 raised when unladen. This needs to be checked again when the trailer or caravan is loaded. If the cable is too tight, the brakes will be applied as the axle moves backward under spring deflection.

Adjuster Automotive Type

Adjusting the automotive style handbrake on later models is done as follows.

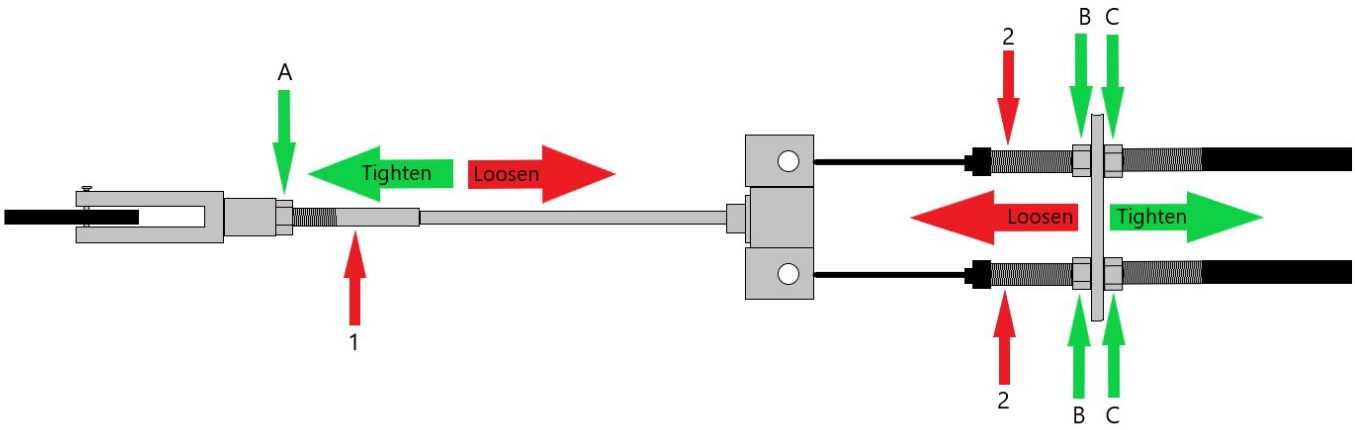
To adjust the left and right side simultaneously:

1. Loosen locknut A
2. Turn shaft 1 clockwise, shortening the length exposed until desired adjustment achieved.
3. Re-tighten locknut A

For extended adjustment or to balance left and right cables:

1. Choose the side you want to adjust and undo locknut B.
2. Turn locknut C behind mounting bracket clockwise in the direction of the handbrake lever while loosening locknut B to tighten the cable and apply more handbrake.
3. Turn locknut B clockwise towards the backing plate while loosening locknut C to reduce handbrake.
4. When finished, tighten locknuts to prevent further movement.

Fig: H1



Correct Use of Your Electric Brakes

Your trailer brakes are designed to work in synchronisation with your tow vehicle brakes. Never use your tow vehicle or trailer brakes alone to stop the combined load. Your trailer and tow vehicle will seldom have the correct amperage flow to the brake magnets to give you comfortable, safe braking unless you make proper brake system adjustments. Changing trailer load and driving conditions, as well as uneven alternator and battery output, can mean unstable current flow to your brake magnets. It is therefore imperative that you maintain and adjust your brakes as set forth in the controller manual, use a properly modulated brake controller and perform the synchronisation/adjustment procedure recommended by the brake controller supplier.

Important Safety Notice

Proven and in some cases approved service methods and correct repair procedures are essential for the safe, reliable operation of the brakes, suspension and axles as well as the personal safety of the individual doing the work. This manual intends to provide general directions for performing service and repair work with tested, effective techniques. By following these guidelines, it will help assure

reliability. The numerous variations in procedures, techniques, tools and parts for servicing axles, as well as in the skill of the individual doing the work will determine outcomes. This manual cannot possibly anticipate all such variations nor provide advice or cautions as to each. Accordingly, anyone who departs from the instructions provided in this manual must first establish that they neither compromise their personal safety nor the vehicle integrity by their choice of methods, tools or parts.
*If at all in doubt please refer all repairs and maintenance to a suitably qualified or experienced mechanical repairer.

*Market Direct Campers accepts no liability for personal injury, loss or damage resulting from incorrect applications, methods, and failure to perform maintenance safely and correctly.

Brake Adjustment

Brakes should be adjusted (1) after the first 300 km's of operation when the brake shoes and drums have "seated," (2) at 5000 km's intervals, (3) or as use and performance requires. The brakes should be adjusted in the following manner:

Never crawl under your trailer unless it is resting on properly placed jack stands. Do not place supports on any part of the suspension system and use the designated jack point or under the spring base plate to jack trailer.

Brake Cleaning and Inspection

Your trailer brakes must be inspected and serviced at 5000km or more often as required by use and performance. Magnets and shoes must be changed when they become worn or scored to avoid inefficient vehicle braking.

Brake Lubrication

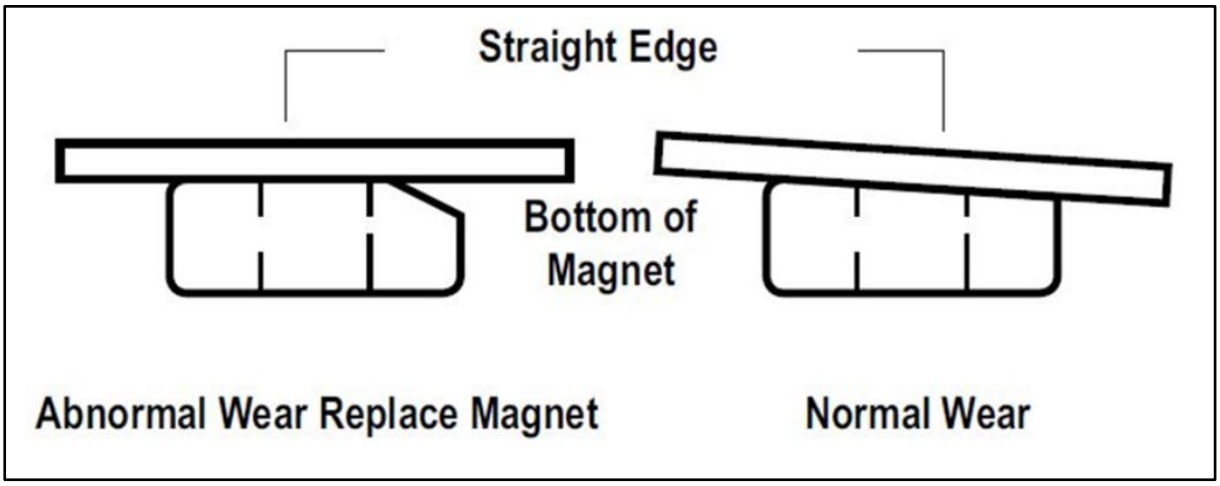
This should only be done by qualified persons.

Caution

Do not get grease or oil on the brake linings, drums, or magnets.

Magnets

Your electric brakes are equipped with high quality electromagnets that are designed to provide the proper input force and friction characteristics. Your magnets should be inspected and replaced if worn unevenly or abnormally.



Even if wear is normal as indicated by your straightedge, the magnets should be replaced if any part of the magnet coil has become visible through the friction material facing of the magnet. It is also recommended that the drum armature surface be refaced when replacing magnets.

Magnets should also be replaced in pairs - both sides of the axle. Always use genuine MDC OEM parts.

Shoes and Linings

A simple visual inspection of your brake linings will tell if they are useable.

Replacement is necessary if the lining is worn (to within 1.5mm or less), contaminated with grease or oil or abnormally scored or gouged. It is important to replace both shoes on each brake and both brakes of the same axle. This is necessary to retain the “balance” of your brakes. Be sure to replace your shoes only with genuine MDC parts available from our outlets.

Corrosion Prevention

It’s important to take steps to prevent corrosion of parts on your trailer to extend the service life. Many fittings are high tensile and therefor zinc plated. Fittings such as this can benefit from additional protection. Some helpful products to prevent corrosion are “Lanotec”, “WD40”, “Inox” and similar products. These can be spray applied and do a very good job of protecting metal surfaces, particularly in corrosive and aggressive environments near the ocean and inland waterways.

Often, we take our campers and caravans to saltwater environments. Driving through saltwater is never recommended as the residual chloride ions accelerate corrosion greatly. If you are camping near or driving through these kinds of environments, we highly recommend that your trailer be thoroughly cleaned after use. Flushing the chassis and washing and rinsing your trailer is important.

Wheels and Tyres

Highway

Your caravan is fitted with 16" wheels and 265/75 R16 Goodride Tyres. The tyres are a "Light Truck" tyre with a mud terrain tread and a maximum load rating on single axle of 1550kg at 80psi.

Recommended highway pressure at tare weight of the caravan is 31psi

Recommended highway pressure at ATM of 3000kg is 41psi

Off Road

Off road driving requires lower tyre pressures and lower speeds. When driving on rough and corrugated road, a reduction of speed and controlled deflation of tyres is required to protect the caravan and its suspension from damage. In extreme circumstances tyre pressures may be reduced significantly. When lowering from highway pressure, a rule of thumb is to reduce your speed by the same percentage as the lowering of tyre pressure.

Because off road conditions can vary greatly, you must lower your pressures and reduce speed until vibration and shock through the suspension is at a moderate level to suit the conditions you are experiencing, and the loaded weight of your caravan.

 WARNING: When returning to the highway or when increasing speed, you must reinflate the tyres to correct highway pressures. Failure to reinflate can cause severe handling problems resulting in injury or death.

Suspension

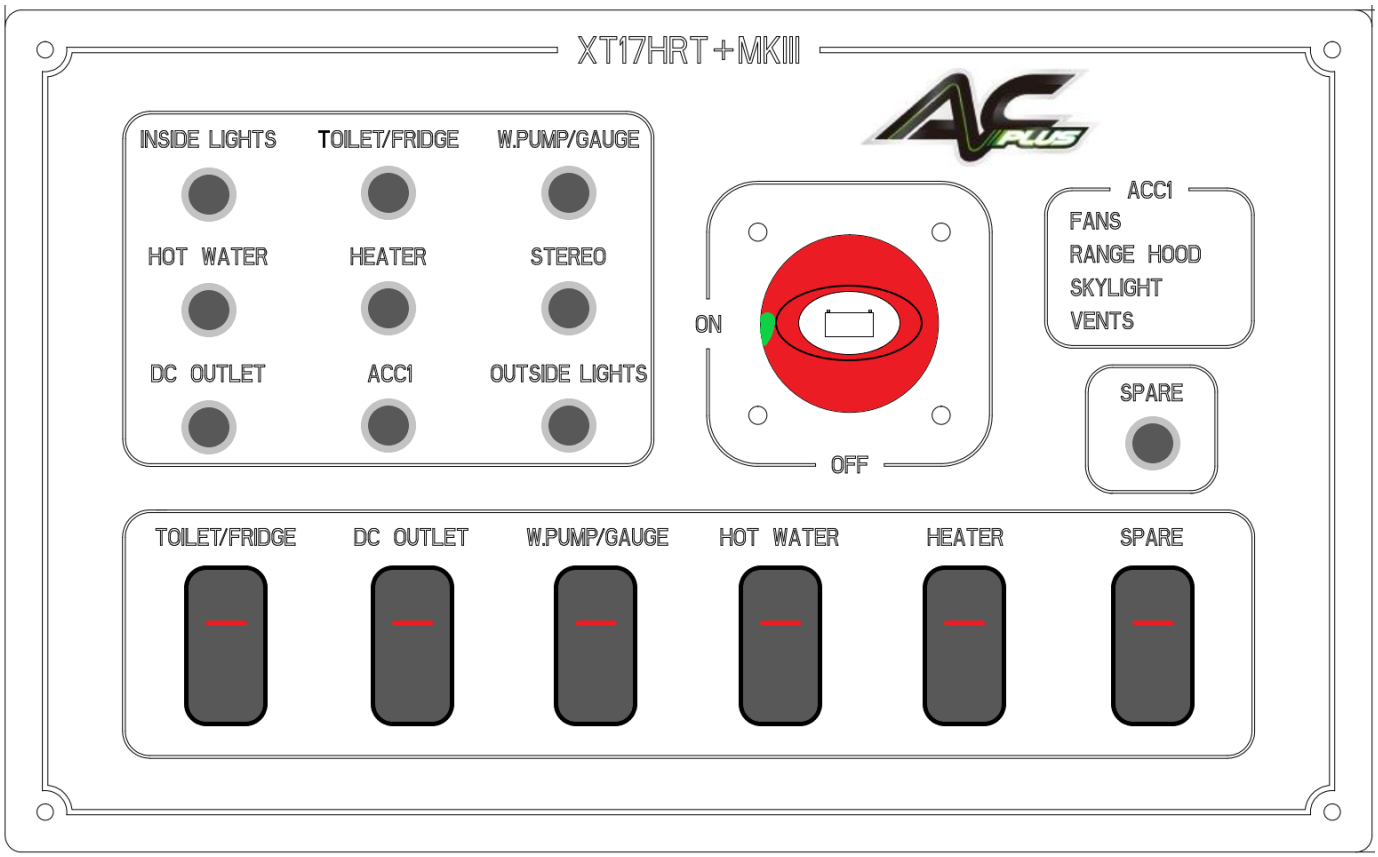
Your camper is fitted with quality independent trailing arm suspension with dual shock absorbers. This design is ideal for the full range of use on and off road however, there are limitations in prolonged use of corrugated and rough road.

Shock Absorbers & Bushes

The function of shock absorbers is to turn kinetic energy into heat and dampen the rebound in the suspension to keep the tyre in contact with the road. During prolonged periods on corrugated and rough roads it is possible to overheat shock absorbers to the point of failure (shock fade). Best practice is to take regular breaks and allow both the shock absorbers and suspension bushes to cool. Overheating the bushes through prolonged driving on corrugations can soften the thermoplastic and cause premature wear and/or deformation of the bush. On severely rough roads stop regularly up to every hour to allow components to cool.

Electrical

Control Panel



12V power can be turned off via the red rotary switch on the panel.

Circuits that remain live are:

- Breakaway Switch
- Radio Constant
- Trail Assure Stability Control
- Power to shunt.
- Charge from solar panels
- Charge from Vehicle
- Charge from Inverter/Charger Mains AC

To shut down power points, turn off inverter and remove mains power connection.

WARNING: When switched off the INVCHR2 unit will still retain power.

Mains Power

The Projecta INVCHR2 in your caravan is connected to shore power via the 15A exterior socket. To use site power, you will require a 15A power lead connected to a 15A outlet. In the event a 15A outlet is unavailable you will need a conversion box that will step up from 10A to 15A with a safety switch. Never leave power leads coiled when in use, lay the lead out back and forward in a manner that won't be a trip hazard or risk damage to the lead.

RCD Safety Switch

The shore power safety switch or RCBO, is located inside the caravan. In the event of a shore power fault, this switch will cut power to the caravan 240v outlets.

Isolator Switch 240V

You can isolate the 240VAC power to GPO's and air conditioner using the isolator switch should you choose not to run power to those items. DO NOT cut 240V power to the air conditioner whilst running, only use the remote as the air conditioner has a soft shutdown function. Cutting power whilst running may damage the unit.

Charging from your Vehicle

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.

Lithium Battery System

WARNING

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.

Your RV is fitted with a 2 x 300Ah Lithium Iron Phosphate (LiFePO4) battery system, replacing the traditional AGM type battery systems.

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.

For more detailed information and user instructions, please refer to the appliance manuals provided.

Battery Care

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 battery 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, 7-stage charger. If this isn't 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)

Lithium (LiFePO4) Battery Reset

The battery installed in this Caravan or Camper Trailer is 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 short period and the PROJECTA display may show no voltage. To reset and recharge the battery, follow these steps:

(A) VOLTAGE DISPLAYED ON PROJECTA SCREEN:

1. Turn off all loads.
2. Connect your Caravan or Camper Trailer to 240V (AC) mains power and switch it on – this will start the Battery Charger.
3. Confirm BULK CHARGE light is displayed on the screen; and
4. Charge battery for at least one hour before turning DC loads back on.

(B) 0.0V OR NO VOLTAGE DISPLAYED ON PROJECTA SCREEN*:

1. Turn off all loads.
2. Connect your Caravan or Camper Trailer to 240V (AC) mains power and switch it on – this will start the Battery Charger.
3. Confirm BULK CHARGE light is displayed on the screen; and
4. Charge battery for at least one hour before turning DC loads back on.

(C) WHEN OFF GRID

1. Connect 12 pin trailer plug and Anderson plug to the tow vehicle.
2. Start engine and change IDX25X modes to power supply.
3. Charge for 1 hour before restoring loads

**After 10 – 15 minutes with no DC loads applied, the BMS 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)*

INVCHR2 Inverter-Charger

- 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

- 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.

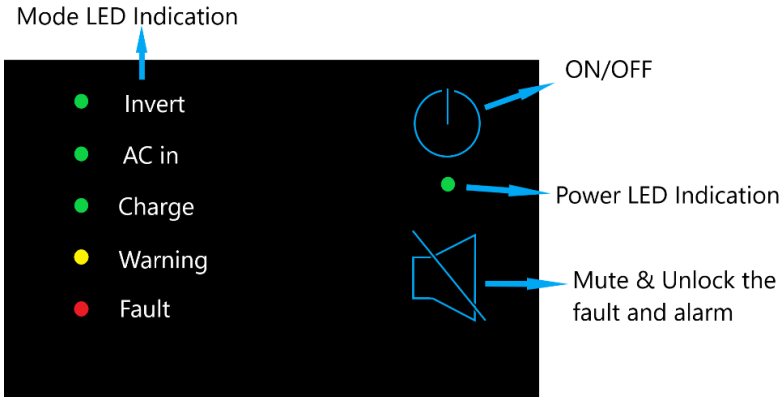
With the rapid charging capability of lithium batteries, the Inverter Chargers can provide high current charging from shore power and can start and powering the most demanding appliances, such as air conditioning, water pumps, washing machine, freezer, compressor, power tools and induction cooktops.

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.



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.

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

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.

INVCHRD-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 INVCHRD-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 form 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:

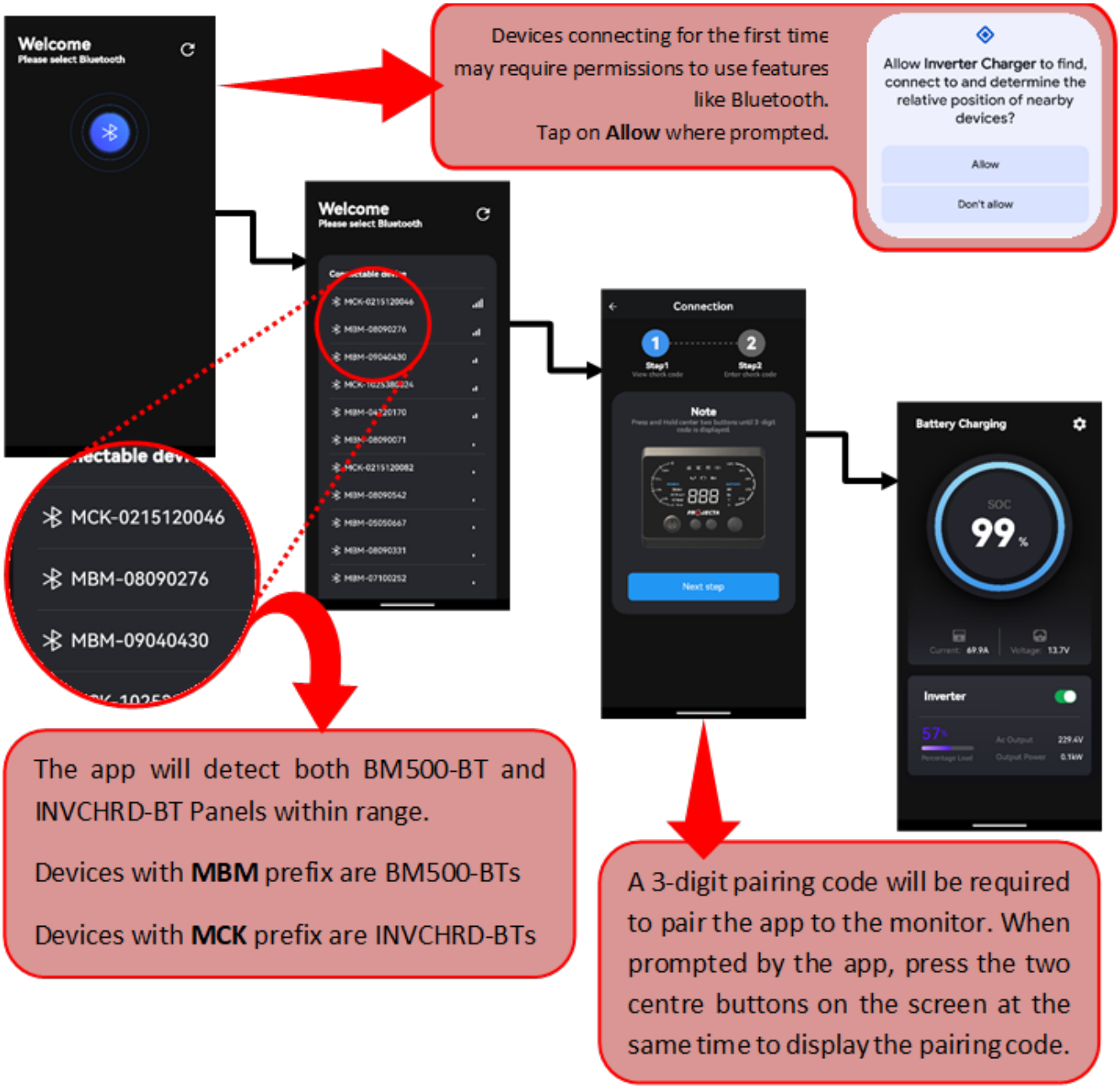
GET IT ON Google Play

Download on the App Store

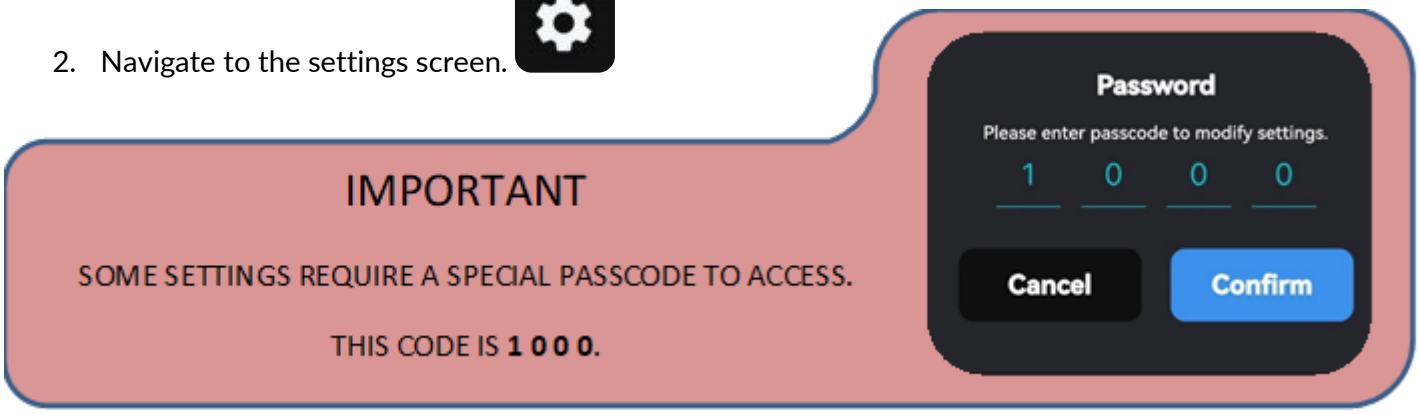
PROJECTA INVERTER CHARGER

TBB POWER

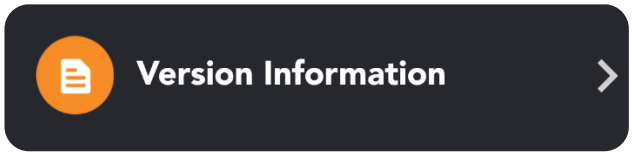
1. Once connected to power, the system will undergo a brief initialisation period while it starts up. Using a smart device with the *Inverter Charger* application installed, open the app and connect to the monitor. Following the on-screen instructions.



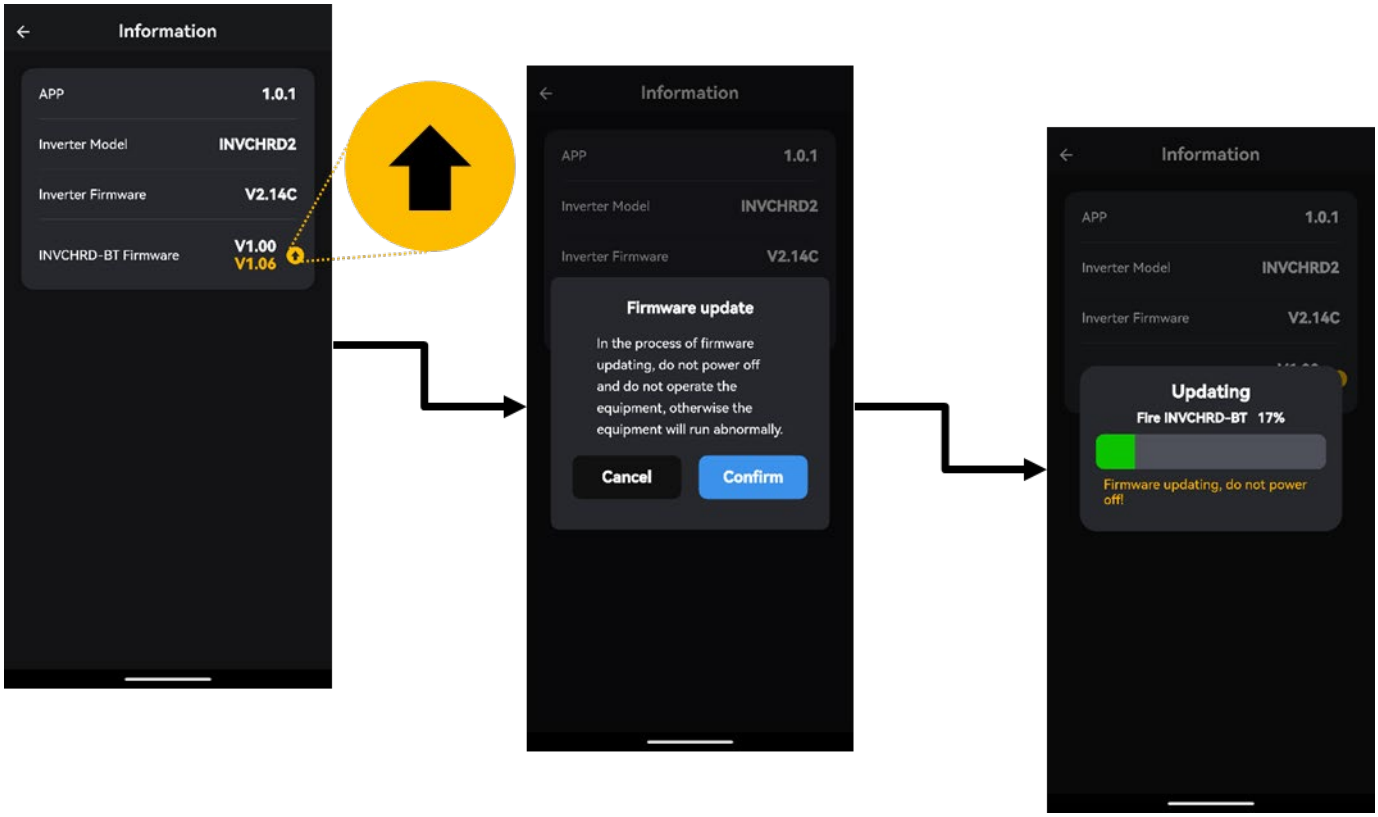
2. Navigate to the settings screen.



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

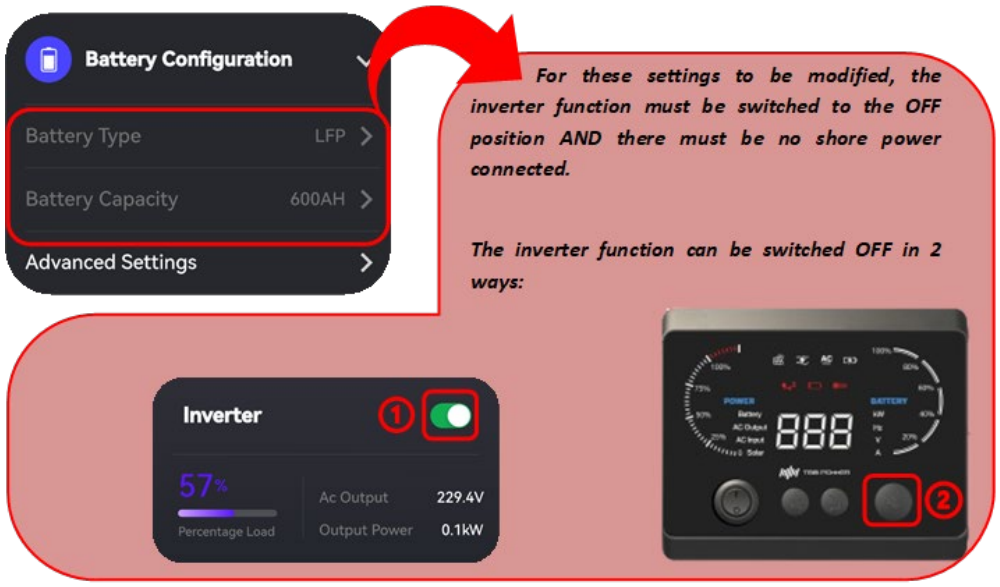
NOTICE

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 XT17HRT+ MKIII		
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

AC Input Configuration		Standard Setting for XT17HRT+ MKIII
1	Maximum AC Input Current	16
2	AC Wave Harmonic Adaption	NORMAL
3	AC Input Source	GRID
4	Detect Neutral and GND Voltage	DISABLE

Display panel Configuration	Standard Setting for XT17HRT+ MKIII
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 XT17HRT+ 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

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.

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

⚠ CAUTION

Always check the input requirements for any appliance before use!

- All normal household appliances operable from a 10-amp 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 or INVCHR2 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	✓
Jigsaw 300-500W	✓	Electric Blanket 100-150W	✓
RV Air Conditioner 2000W	✓	Coffee Machine 2000W	✓
Induction Cooktop 1300-2000W	✓	C-Pap Machine	✓
Microwave 900-2000W	✓	Washing Machine 500-1400W	✓
Fan Heater 2000W	✓		

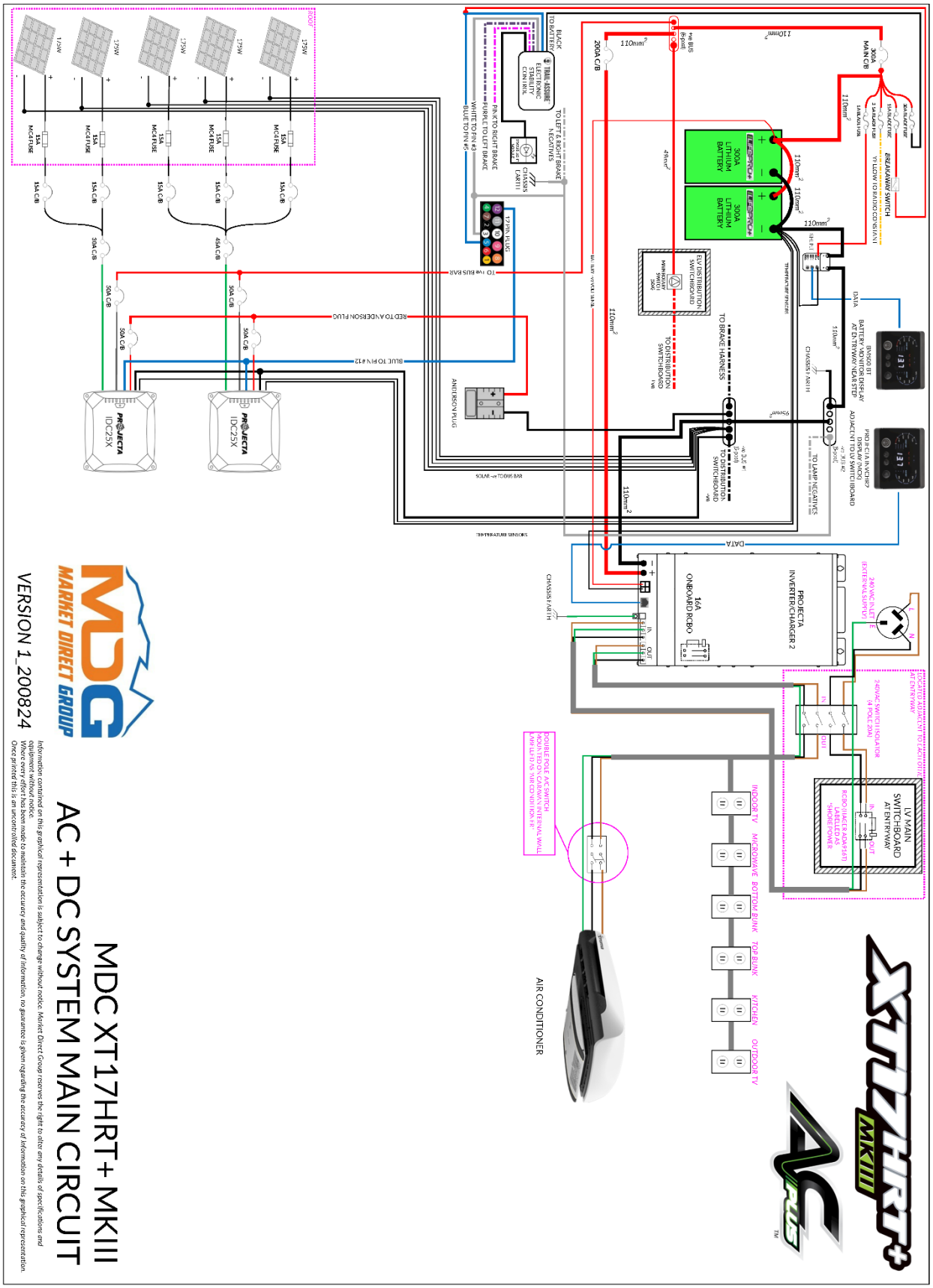
12V DC Outlets:

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

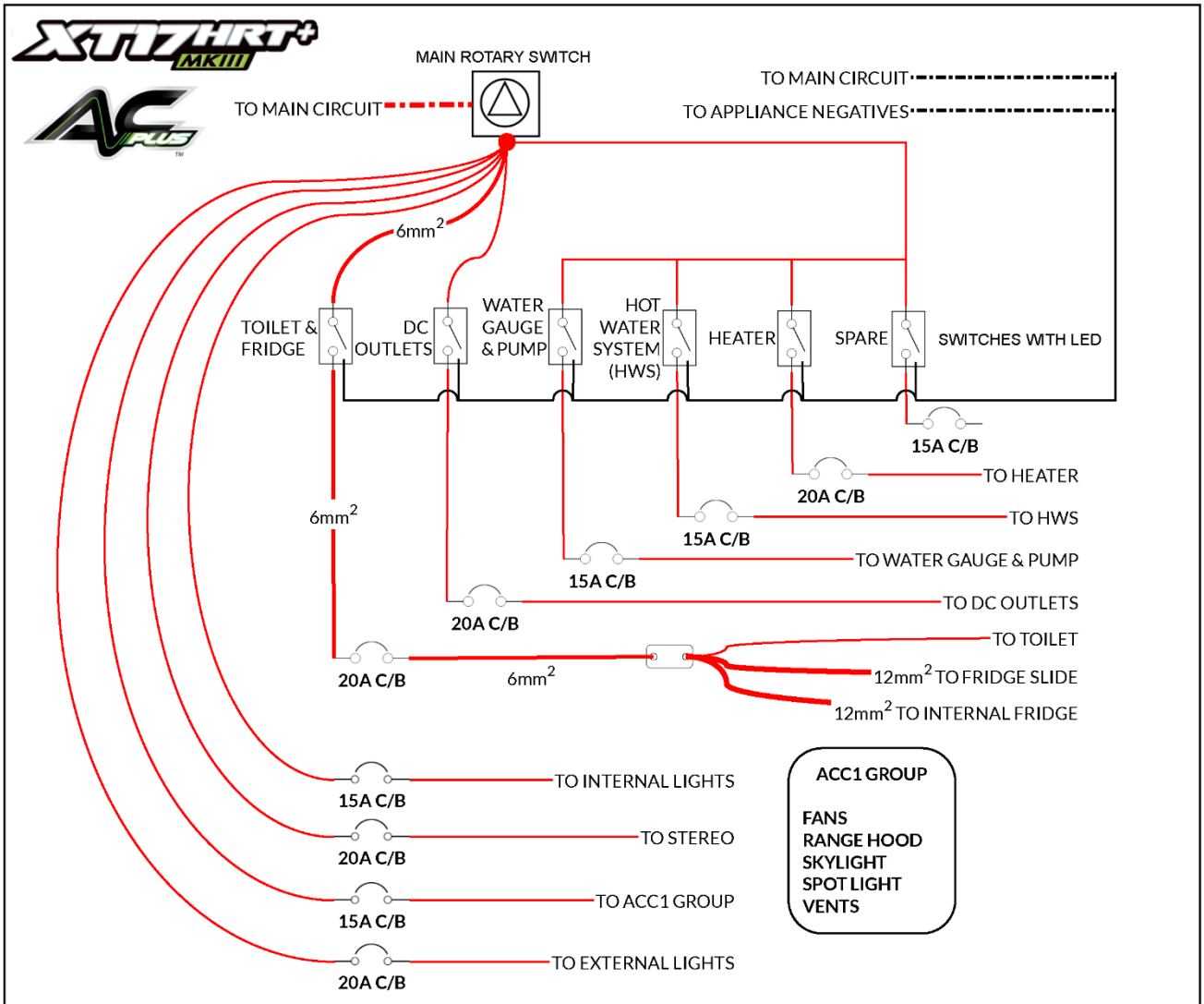
USB Outlets:

- Phone and tablet charging only.

12 Volt Wiring Diagram
Main Circuit



Distribution Circuit



Wire Size Guide

Application	Colour	Size (mm^2)	Application	Colour	Size (mm2)
Stereo	BROWN	1.7	Range Hood	BLUE/BLACK	1
Awning	BLUE	1.7	Cabinet Light	ORANGE	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	Colour Strip Lights	BROWN	1
Toilet	YELLOW/WHITE	1.7	Handle Light	RED/GREEN	1.7
Exhaust Fan	ORANGE/WHITE	1	Step Light	BLACK/RED	1.7
Cooktop/Oven	RED/WHITE	2.5	Ceiling Light	WHITE	1.7

MARKET DIRECT GROUP

MDC XT17HRT+ MKIII DC DISTRIBUTION SWITCHBOARD

VERSION 1_200824

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.

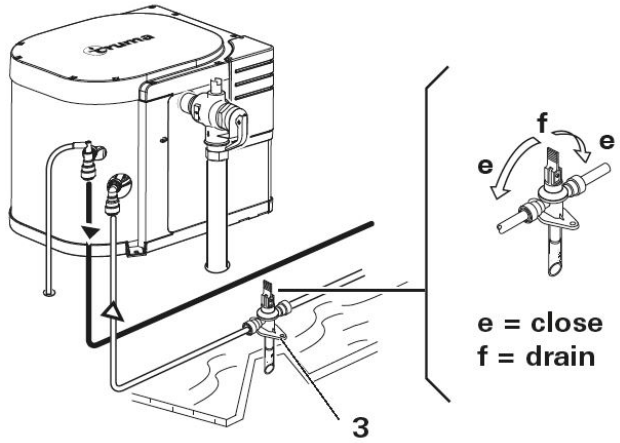


Fig. 2

– 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. 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.

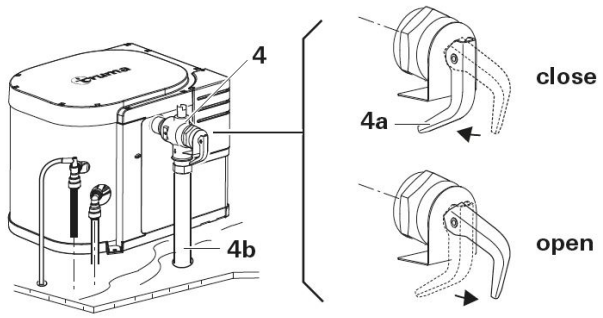


Fig. 2a

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).

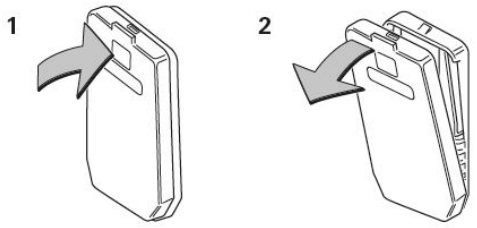


Fig. 3a

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 indictor 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).

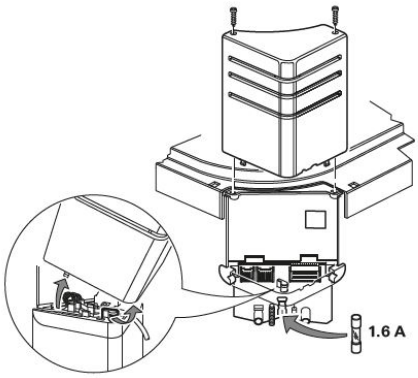


Fig. 6

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

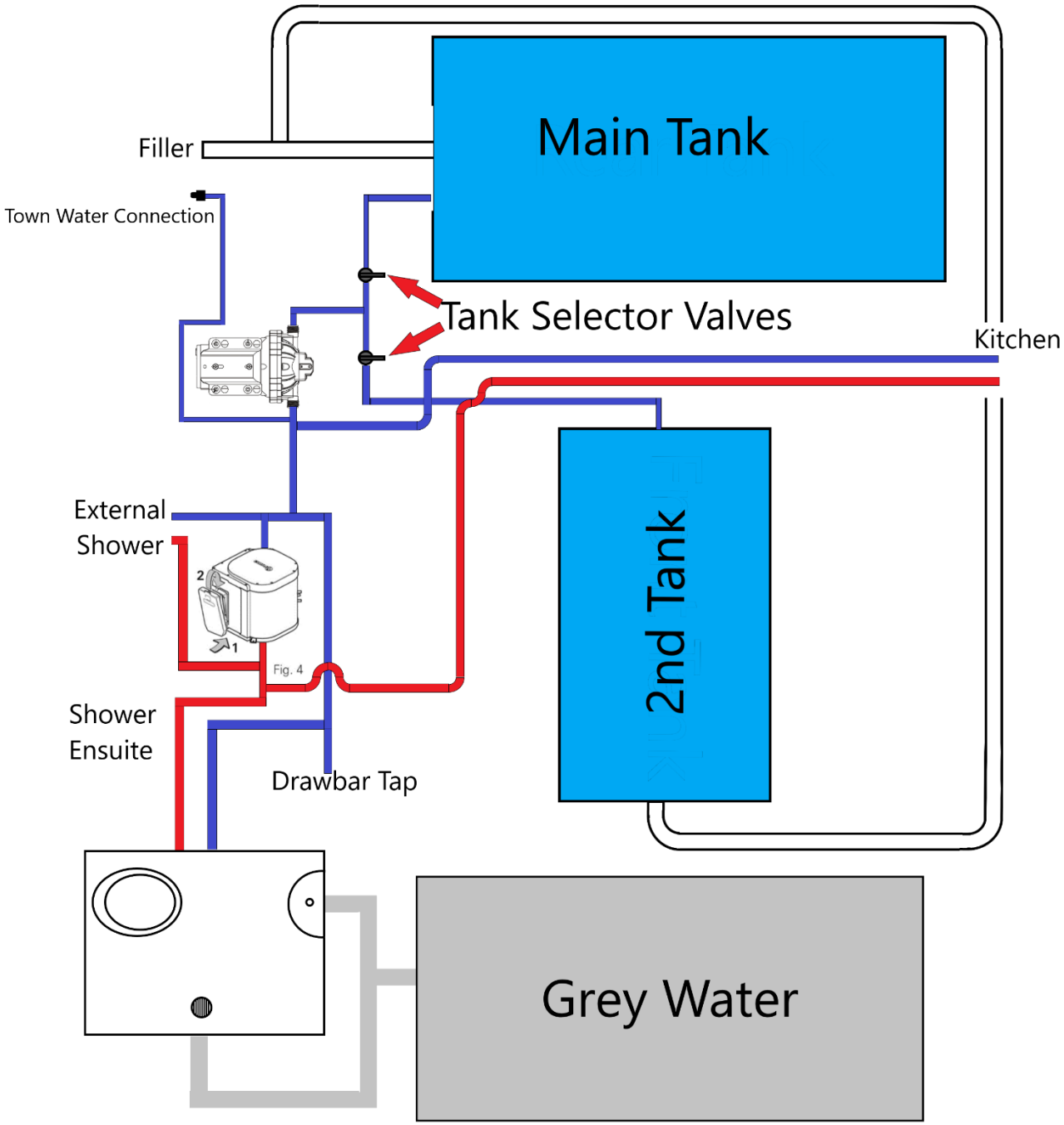
Symptom	Cause	Remedy
Water drips from the P&T safety valve.	– Water pressure to high. – Lime or dirt under the P&T safety valve seat.	Check water pressure (max. 400 kPa), use a pressure reducer when connected to central water supply. Allow the appliance to cool and then slowly raise the test lever (Fig. 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.

Water Tanks

Beneath the water pump location on the outside of the caravan you will find the selector valves to choose which water tank feeds the water pump.



Connecting the Gas

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.**

Internal Kitchens and Hot Water Systems each have an isolation valve on their gas supply line. Ensure the valve is turned on (handle running parallel to the gas line) when using these appliances.

The gas isolation valves for the hot water system is beside the system under the bed and gas cooktop is located in the cupboard beneath the cooktop.

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 and ventilation 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.

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 damp 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.

Using the Toilet

The toilet can withstand a maximum load of 120kg. Make sure you do not overload the toilet.

See the images in the fold-out cover for a visual reference.

Opening the blade:

- Open the blade by turning the control knob counter-clockwise (07).
- Close the blade completely by turning the control knob clockwise until you hear a click (07).
- Always close the blade completely after use.

The toilet can be used with the blade open or closed.

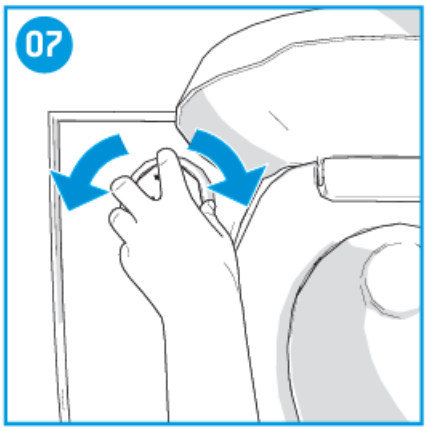
Flushing the toilet:

- Make sure the blade is open.
- Press the flush button and hold it for several seconds to flush the toilet (08).

Ordinary toilet paper can cause clogging. Use Thetford Aqua Soft toilet paper for your toilet. This toilet paper is super-soft, dissolves quickly, prevents clogging and makes it easier to empty the waste-holding tank.

To prevent water damage to your caravan or motor home, do not travel with water in the toilet bowl.

Do not leave water in the toilet bowl if the toilet is not being used. This does not help to reduce unpleasant smells and only leads to flooding.



Chemicals:

Always use water treatment and conditioning products recommended by the manufacturer.

Thetford

Waste Holding Tank: The recommended product for the waste holding tank on Thetford toilet systems is Aqua Kem Blue or Aqua Kem Green for better environmental performance.

Cleaning Cassette Tank: "Cassette Tank Cleaner" is the recommended product for this application.

Flush Water Tank: Only suitable for MDC models that have a toilet flush tank.
***Do not add to main water tanks! *** Thetford recommend "Aqua Rinse"

Grey Water Tank: Tank Freshener

Fridge Slide Storage

Power Outlet

This outlet housed inside the fridge slide storage box provides a 50-amp Anderson plug connection and a 12 volt socket. Fridge power should be drawn from the Anderson plug to minimise voltage drop and provide maximum fridge performance. To ensure power to the fridge slide:

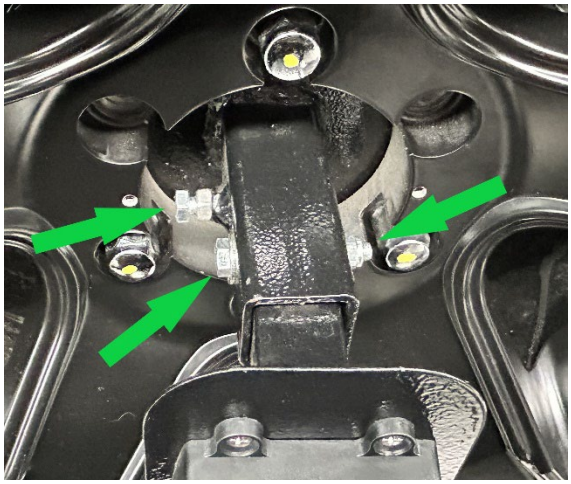
- 12V rotary switch must be turned on
- Fridge/Toilet switch on main panel must be turned on

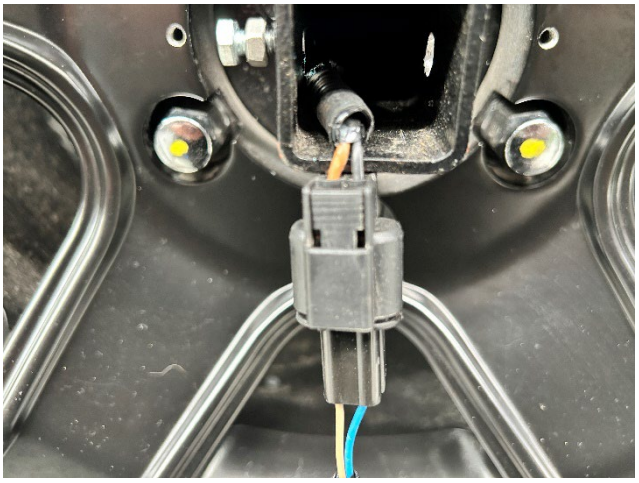
Ladder

- The maximum load for the ladder is 100kg
- No children under 16
- Do not use when wet

Number Plate Holder

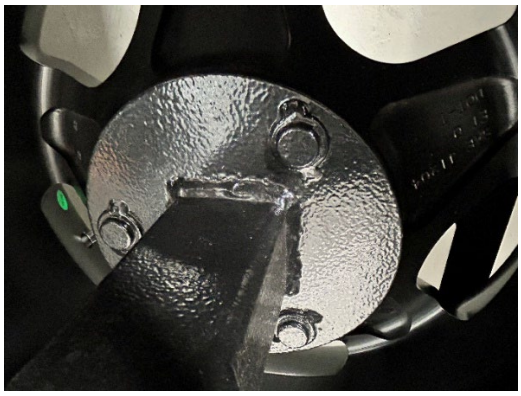
To remove the number plate holder to access the spare wheel requires 2 x 13mm spanners or 1 x 13mm spanner and a small adjustable spanner. First remove the through bolt then release the anti-rattle bolt. Next slide out the holder to reveal the 2-pin plug and disconnect.





Spare Wheel Holder

The spare wheel is held on by 3 x wheel studs and lug nuts. The wheel studs are NOT welded in place and can be removed to be used as spare parts.



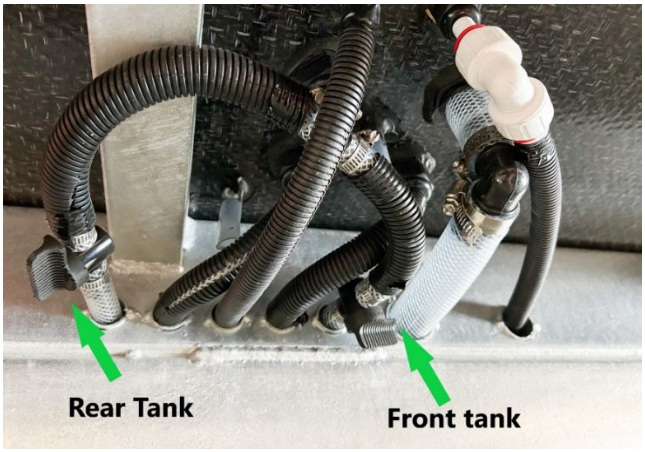
Water Fillers & Tanks

Changing From One Tank to The Other

Selecting Freshwater Tanks

If your caravan is fitted with more than 1 water tank, there are tank selector valves located under the caravan on the driver's side below the water pump location. Use these valves to select the forward or rear water tank.

IMPORTANT NOTE: Use 1 tank at a time, when the water level gets low the pump will draw air into the line. Switch to the other tank and run the tap until the air is removed,



Draining The Grey Water Tank

To drain the grey water tank, release the drain hose from the rubber securing strap and turn valve. To extend dump location, use a 25mm sullage hose connected to the hose tail of the valve.

Flushing The Grey Water Tank

By opening the grey water tank valve and opening the grey water flushing cap, you can flush out the tank. MDC recommend using a tank fresh chemical to prevent smells and reduce scum build up. White vinegar 1:20 with water or a proprietary tank cleaning product should be used regularly every 6 months.

Ancillary Items Explained

These items may be included with your trailer.

Range Hood Vent Cover

Wheel Brace

A wheel brace is included for checking wheel nuts after pickup of your trailer. You should replace this with a torque wrench with an extension bar and socket to ensure wheel nuts are torqued to 140nm when checking periodically.

Jack

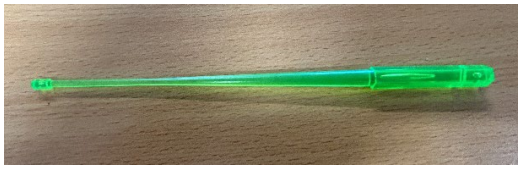
A jack is included for changing tyres. This includes a handle. See the section “Jacking you Caravan or Camper” for further instructions on use.

Awning Pegs

These pegs are to secure the electric awning legs when placed on the ground.

Awning Adjuster

This tool is used to adjust the limits on awning extension and retraction. For use, see the awning instruction included with the supplier booklets or contact MDC.



Fridge Straps

Lanolin Spray

Protective coating against corrosion and lubricant spray

Antenna Cable

Spare Parts

The contents are service spares which include wheel studs, wheel nuts, castellated nuts, split pins and bearing seals. If you require additional wheel studs and/or nuts in an emergency, the wheel studs in the spare wheel holder are removable.

TV 12v Adapter

To connect your TV to 12v power, use this adapter and plug into a 12v socket. Ensure the 12v socket switch is turned on at the main control panel. (Contains fuse)

Air Conditioning Remote Control

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.

Trouble Shooting

240 Volt Electrical

PROBLEM	POSSIBLE CAUSE	REMEDY
No power	Not connected to mains	Connect to mains power
	240Vac Isolator Switch is turned OFF	Turn ON isolator switch
	RCD unit has tripped	Reset the RCD unit switch to up position. - Check main RCD at entryway. - Check RCD at INVCHR2
	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
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 RCDs
No charge with charger on	Tripped circuit breaker	Reset circuit breaker CB1 & CB2
	Incorrect charger setting	Set charger to correct battery type and power setting (AGM for standard batteries)
	Battery voltage too low (less than 6 volts)	Change charger setting to "Supply" until battery voltage reads minimum of 6 volts then choose setting "recondition" if this function is available. Choose "AGM" if not available.
If error code appears on the charger display refer to the Projecta user manual.		

Table 5

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 batteries
	Flat Battery	Battery needs reset: See *Lithium (LiFePO4) Battery Reset* section of this manual.
		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 and/or at INVCHR2
	Charger not turned on	Ensure INVCHR2 is turned on at the INVCHRD-BT display screen
	240Vac Isolator Switch is turned OFF	Turn ON isolator switch
Not charging from solar	See *Solar Charging* troubleshooting (*Table 8*).	

Not charging from vehicle	See *Charging from tow vehicle* troubleshooting *(Table 8)*	
Circuit not working	Tripped circuit breaker	Check and reset the individual circuit breaker on the control panel

Table 6

CONTROL PANEL & ACCESSORIES		
SYMPTOM	**POSSIBLE CAUSE**	**REMEDY**
Control panel will not switch on	Flat batteries	Charge batteries
	Tripped circuit breaker	Reset circuit breaker CB1
Accessory circuit not working	Tripped circuit breaker	Reset circuit breaker above circuit switch by pushing in. Listen for click.
RV Electronics tank gauge not working	Flat battery in face panel	Remove face cover and replace battery (see RV electronics manual)
Inverter not switching on	Tripped circuit breaker or RCD	Reset circuit breaker CB2 & RCDs

Table 7

CHARGING FROM TOW VEHICLE		
SYMPTOM	**POSSIBLE CAUSE**	**REMEDY**
No charge Alternator light not showing on DC to DC	Tripped breaker	Check & Reset circuit breakers CB5 & CB1
	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 CB4 & CB1
	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.

Table 8

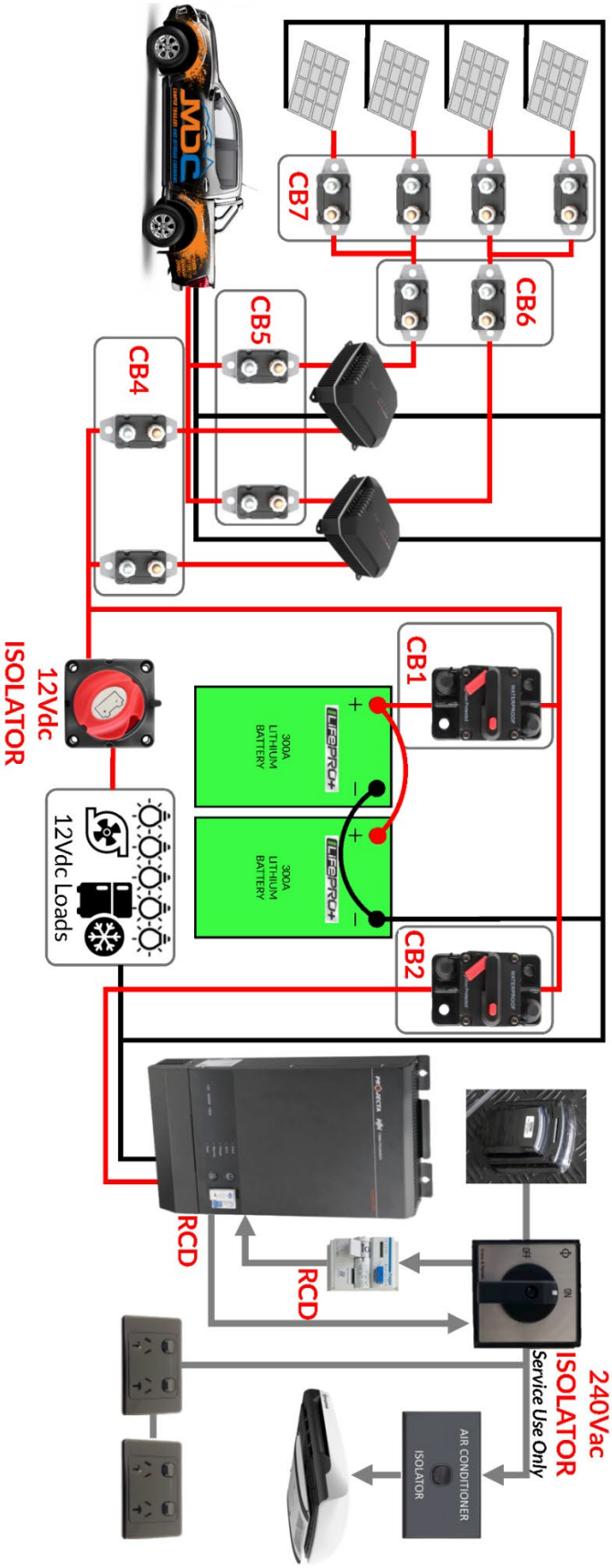
SOLAR CHARGING		
SYMPTOM	POSSIBLE CAUSE	REMEDY
No solar power DC to DC solar light not showing	Tripped circuit breaker	Check and Reset circuit breakers CB6 & CB7
	DC to DC overloaded	Reset DC to DC by disconnecting from battery and solar input. See Projector user guide.
No solar power DC to DC solar light showing	Tripped circuit breaker	Check & Reset circuit breaker CB4 & CB1
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

Table 9

INFORMATION

Expectations of the solar charging system should be reasonable. For example, running two fridges without adding additional solar and following best practice such as pre-cooling and tight packing will reduce increase power requirements of the refrigerant compressor and lead to reduces available battery capacity and the ability of the solar panels to maintain power requirements. Using the inverter functions can also very quickly diminish battery capacity. It is essential that diligent power management is practices whenever off grid.

Fig. 1


CB7
CB6
CB5
CB4
CB1
CB2
12Vdc
ISOLATOR
300A
LITHIUM
BATTERY
LIFEPRO+
12Vdc Loads
RCD
RCD
240Vac
ISOLATOR
Service Use Only
AIR CONDITIONER
ISOLATOR

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 obstructed.
	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

These are available from Market Direct Campers

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

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.
These terms and conditions apply to MY25 plated (2025 Build) models onward sold in Australia only. These terms and conditions do not impact a customer's rights under Australian Consumer Law.
Warranty terms and conditions applicable to pre 2025 models remain unchanged. To obtain a copy of the previous published terms and conditions please contact Market Direct Group Pty Ltd on 1300 494494 option 3.

VALIDITY OF CLAIMS

- 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 24 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.
- 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).
- 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.
- 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.
- 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.
- 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.
- Any affiliates, representatives, associates, agents, suppliers, resellers or similar of ours have no authority to approve or deny warranty claims on behalf of us.
- 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.

REMEDIES AND LIMITATION OF LIABILITY

- We will not be liable under this warranty for, except as otherwise required by law, your remedy, if we accept a warranty claim it 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, as these are not defects.
- 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.
- 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.

ITEMS NOT COVERED UNDER THIS WARRANTY

- Dust ingress due to limitations of proprietary third-party products and mandatory venting, required under Australian Standards and compliance under State and Federal statutes (and hence not being defects).
- This Warranty does not cover damage of the following kinds or to the following products or parts of products:
    - Rust
    - Wheels and Tyres
    - Paint
    - Travel Covers and Straps
    - General consumables (e.g. bearings, light bulbs etc)
    - 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.

FACTORY SECONDS, EX-DEMONSTRATION AND DAMAGED GOODS

- 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.
- 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.
- 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, ie 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.
- 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.

  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 right to make a warranty claim for products purchased at auction.

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:

- 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;
- 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.
- 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.

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 3).

Travel Record

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

Trip Name	Date	Km Start	Km Finish	Cumulative Km

Trip Name	Date	Km Start	Km Finish	Cumulative Km

Mechanical Maintenance

Maintenance is essential to keep your caravan in a safe and usable condition. Caravans are no different to any other motor vehicle and require servicing at regular intervals which may vary according to use and the environment in which it is used. The service schedule outlines the service intervals for safe travelling and your owner obligations under our warranty policy. Servicing should always be carried out by a competent person with relevant experience.

WARNING:

- Never work beneath the caravan while suspended on a jack. Always use “Jack Stands” with an adequate SWL.
- Always use dedicated jacking points
- 240volt appliances and wiring must only be serviced and repaired by a qualified tradesperson.
- Gas plumbing must only be serviced and repaired by a qualified gas fitter

Hitch

Cruisemaster DO35

To ensure a long service life we recommend the following periodic maintenance procedures.

1. Always keep Tow Pin and Universal mating surfaces clean and lightly lubricated.
2. Check condition of Tow Pin O-Ring and replace if necessary (Part No. 18D-DO35-101).
3. Regularly lubricate grease points with multi-purpose grease.
4. Periodic adjustment of Slotted Nut & Pin may be required of coupling head loosens excessively and should be a competent person.
5. Flush with clean water if locking mechanism does not open fully due to dirt ingress.

Ball Bearing Slides

To lubricate and protect from corrosion the ball bearing slides should be lubricated with a small amount of general purpose grease every 6 months.

Wheels and Tyres

Tyres should be checked for damage prior to each trip. Inspect for adequate tread depth and any damage particularly to sidewalls. Wheel nuts must be checked with a torque wrench. When picking up your new caravan check the wheel nut torque at 50, 100, 200 and 500km. Check before each trip and daily when travelling for longer periods. Do not over tighten, always use a torque wrench to ensure accuracy.

Brakes

The electric brakes on your caravan are a drum type. Drum brakes require regular adjustment to ensure even pad wear and proper performance. This is an important safety item. The recommended interval for checking adjustment is 5000km.

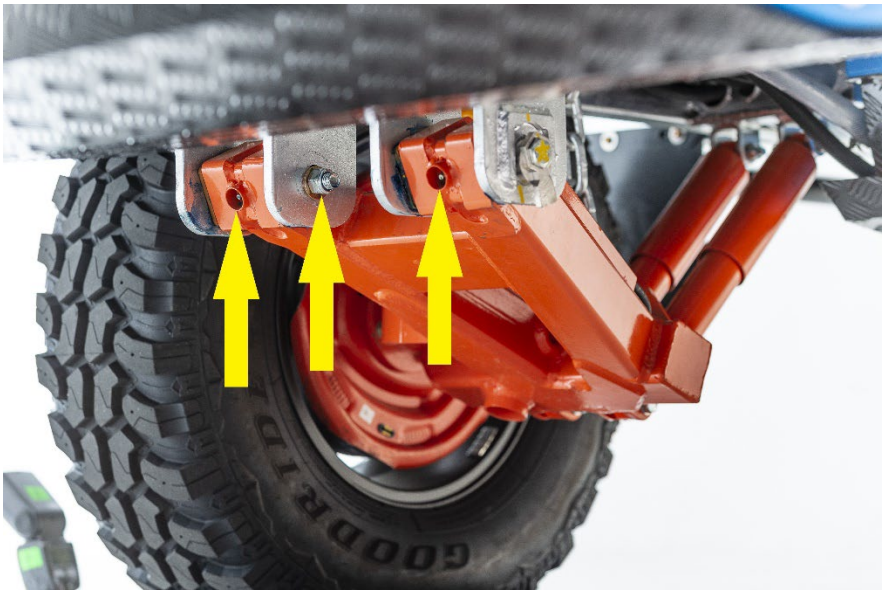
Bearings and Seals

The Timken bearings in your caravan are protected with a rubber seal on the rear of the drum and a friction fit bearing cap on the front. Normal use without encountering water crossings these should be services every 5000km.

Suspension

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 matter. Always use a ramp or similar if you are backing over high gutters and obstacles.

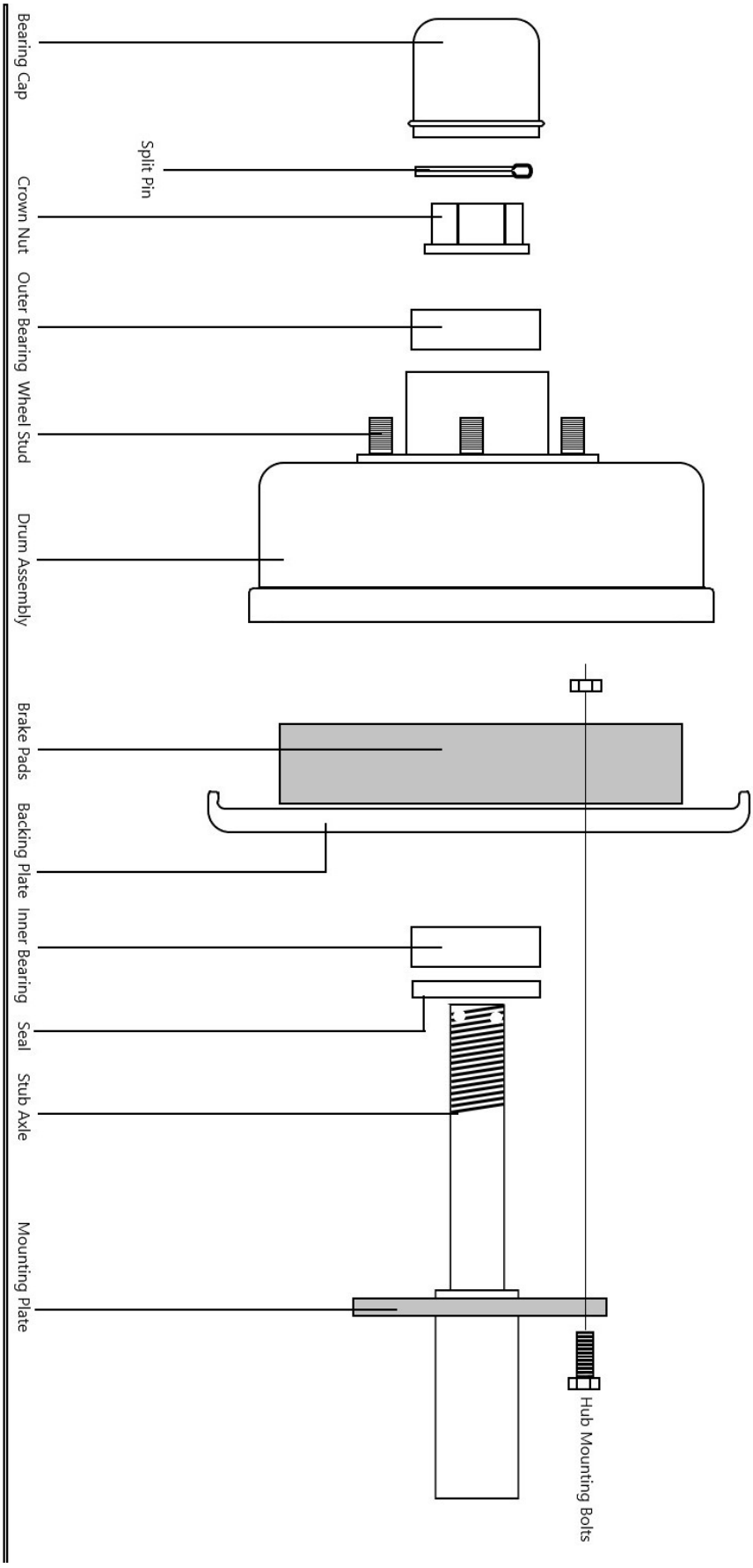


Spare Part Numbers

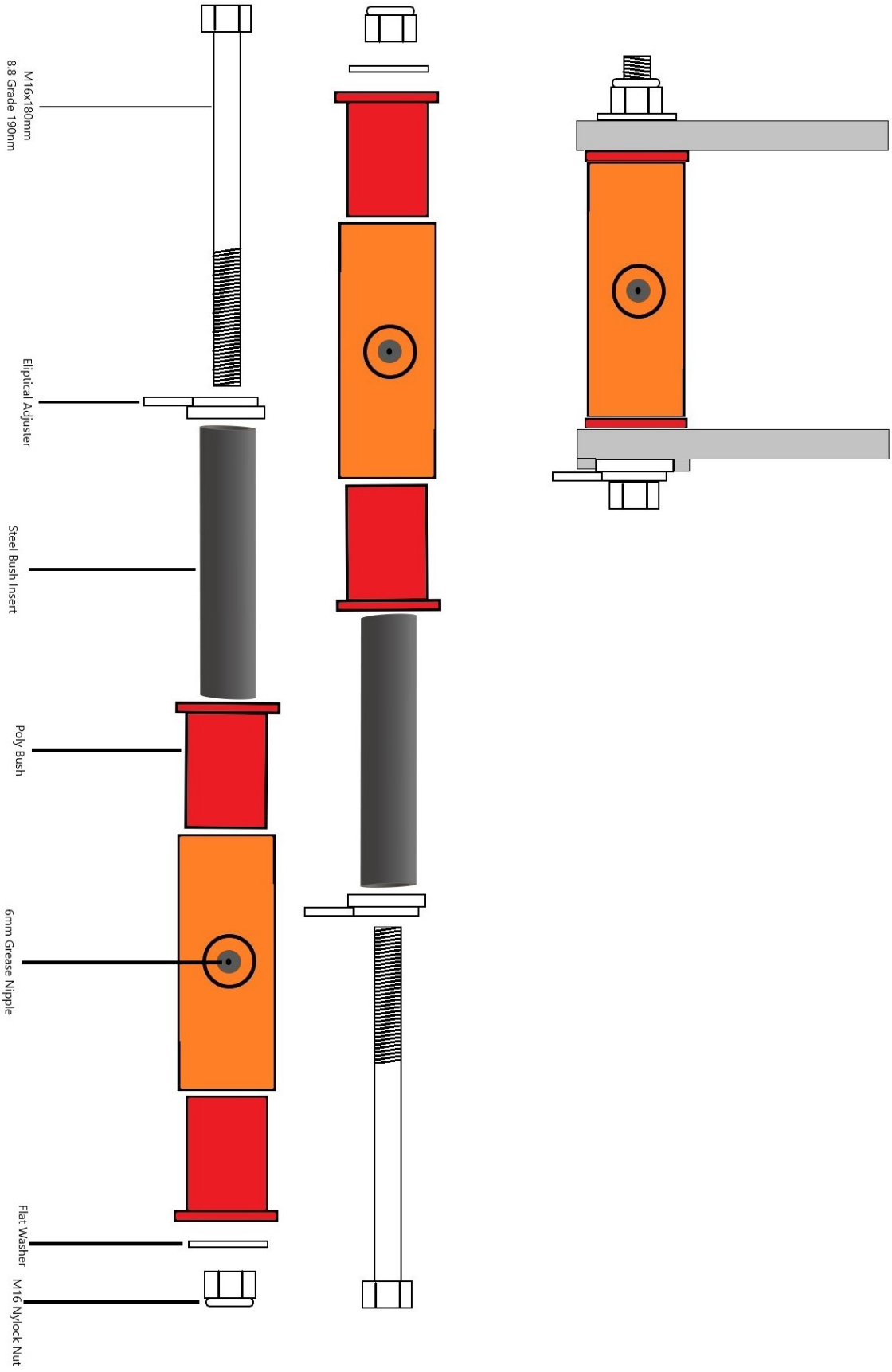
Hub & Suspension Components

Timken Bearing (inner & outer bearings)	25590
Bearing Cone (Inner and outer bearings)	25520
Bearing Seal	55 x 85 x 12mm
50 x 50mm 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

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. • 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: _____ _____ _____ _____ _____ _____

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. • 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: _____ _____ _____ _____ _____ _____

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: _____ _____ _____ _____ _____ _____

Supplier Contact Details

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