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WELCOME AND INTRODUCTION

Congratulations on selecting your new Touring Caravan.

This Owner's Handbook has been prepared for your guidance to help you derive the greatest amount of pleasure from the use of your caravan and your leisure time. We strongly recommend that you read this guide thoroughly so that you are fully aware of all the caravan's features, equipment and systems.

Additional information and detailed appliance instruction manuals are also contained in your Owner's Information Pack which can be found within the kit box supplied with your caravan.

Your new caravan has been designed as a recreational vehicle and is intended for recreational use only. It is not intended for business, or for permanent habitation.

Erwin Hymer Group UK accepts no liability if the caravan is used for any purpose other than recreational/ holiday use. Any use other than recreational/holiday use will invalidate your warranty.

Your new caravan is designed to be towed by a normal motor car.

If you intend to tow it with a pick-up type vehicle, passenger derived van or a 4x4 type vehicle, additional care should be exercised because of the potential for a harder rear suspension on such vehicles which may impose excessive loads onto the caravan.

You may also have to adjust your driving style over rough terrain and particular attention should be given to the height of the tow ball in relation to the caravan coupling. Ref: (United Nations Economic Commission for Europe) UNECE R55 states that the centre of the towball should be between 350mm and 420mm above the ground level.

Your new caravan should not be towed by a commercial vehicle with a gross vehicle weight in excess of 3500 kgs.

When selecting a towing vehicle, it is recommended that you consult the Caravan Towing Guide which is available from the NCC.

By following the instructions provided in this handbook and maintaining your caravan in a first class roadworthy condition, you are sure to have many years of carefree use.

To ensure the very best quality and reliability all touring caravan designs and new developments are rigorously tested.

Therefore Erwin Hymer Group UK will accept no liability or uphold the warranty if the caravan is altered or modified in such a way that would adversely affect the reliability.

Please note: It is a condition of your warranty that the caravan must have an "annual service" carried out by an Erwin Hymer Group UK approved Retailer / Service Centre or NCC Approved workshop or NCC equivalent standard as set out in this handbook and a record is kept. Pages are provided in the back of this guide, for your assistance.

An Erwin Hymer Group UK Approved Retailer / Service Centre will be able to supply any replacement parts for your caravan, should the need arise, and in most cases any accessories you may require.

Please note: It is not possible to purchase replacement parts direct from Erwin Hymer Group UK.

Changing market and supply situations may prevent us from maintaining the exact specification details in this guide and we therefore reserve the right to alter specifications as materials and conditions demand.

Enjoy your new caravan

www.elddis.co.uk
www.buccaneer-rv.co.uk
www.xplore-rv.co.uk

Model Year Designation

All Touring caravans manufactured by Erwin Hymer Group UK are designated by their model year. For example, 2022 Model year runs from 1st September 2021 to 31st August 2022.

Erwin Hymer Group UK Technical Approvals

All Erwin Hymer Group UK Caravans have been GB and European Commission Whole VehicleType Approved.

In order to ensure your new caravan is safe to use, Erwin Hymer Group UK are members of and have been inspected by the following bodies.

NCC who operated a certification scheme to ensure compliance with the European safety standards for caravans.

Erwin Hymer Group UK has also obtained ISO9001:2015 accreditation and this is periodically audited.

GENERAL SAFETY

Please read before using your new caravan.

In order for you to get the most out of your new caravan it is necessary for you to be aware of the following:

- (i) Do not obstruct ventilators and clean them regularly, it is advisable to clean and check all the ventilators annually for blockages and where necessary rectify any blockages found.
- (ii) Inspect the high pressure flexible gas hose (available from your retailer) regularly for deterioration and renew as necessary, with an approved type, in any case no later than the expiry date stated on the hose.
- (iii) Ensure the gas supply and all appliances are turned off before towing your caravan.
- (iv) If your caravan has been fitted with a gas BBQ point it must be only used for its intended purpose. **Do not use a gas barbeque within an awning.**
- (v) Never allow modification to your gas or electrical system unless qualified persons carry them out. All modification to the gas system should be carried out by a Gas Safe Register™ approved gas fitter. Any modifications carried out on the electrical system must be carried out by a suitably qualified electrician. Never use portable cooking or heating equipment inside your caravan. Do not use your fitted cooking equipment as heating at any time.
- (vi) In the interest of safety, replacement parts for an appliance should conform to the appliance manufacturer's specifications and must be fitted by them or an authorised agent.
- (vii) If you suspect there is a gas leak please open all the windows then vacate the caravan. Turn off the gas container if safe to do so, then contact your nearest Erwin Hymer Group UK Retailer to arrange for them to check the gas system.
- (viii) Never exceed your caravans Maximum Technical Permissible Laden Mass. (see Caravan Towing Vehicle Weight Ratio).
- (ix) Ensure heavy and large items are secured before towing your new caravan to reduce the risk of damage being caused while the caravan is in motion.
- (x) Pull out/lift up worktop extensions, where fitted, are only designed to take a maximum weight of 6kgs.
- (xi) When your caravan is connected to your towing vehicle it should be level or slightly nose down.
- (xii) Where high level bunks are fitted, care should be taken when used by children. The protection against falling out must be in place when the bunk is used.
- (xiii) When your caravan is loaded to its MTPLM and the weight distributed in accordance with the handbook, your caravan is designed to be towed at a maximum speed of 100kmh/60mph.
- (xiv) **It is illegal to tow your caravan whilst it is occupied.**
- (xv) If your caravan is fitted with a lift up or high level bunk it is designed for a maximum weight of 11 stone and is not suitable for children under 6 years old without supervision.
- (xvi) Do not leave children under 14 years of age unattended in your caravan.
- (xvii) Your vehicles MIRO is calculated with no water on board. To travel with water you must take account of the water in your vehicle payload. 1 litre of water = 1Kg.
- (xviii) Where a dividing curtain is fitted or provided, please ensure when not in use it is stored in the position furthest away from any cooking equipment or in the storage housing if provided.

VENTILATION

All caravans manufactured by Erwin Hymer Group UK are ventilated at both high and low level in accordance with BSEN 721 Safety Ventilation.

High-Level Ventilation

This is mainly provided by fixed ventilation within the fitted roof skylight. These roof skylights should be cleaned annually by use of a small brush to remove any dust that may have accumulated around the mesh fitted. On some roof skylights the mesh can be easily removed to aid cleaning. On fan-assisted roof skylights it is essential that the fan is switched off prior to cleaning.

High level ventilation may also be provided by additional fitted mushroom vents.

Low-Level Ventilation

Low level ventilation is provided within the living area of your new caravan and these can be identified by the fitting of a black cover to prevent them from being obstructed. This cover must not be removed. In order to clean the ventilator, remove the cover by undoing the two screws and clean using a small brush. It is essential that the cover is replaced once cleaning is complete.

Ventilation in Separate Bedrooms

In caravans with separated sleeping areas, separate ventilation is required and is provided via a roof skylight at high level and a ventilator at low level within a bed box or under the fixed bed.

Gas Dispersal Holes

All appliances and gas taps have a gas dispersal hole within the same compartment. It is essential that these are not blocked or made ineffective.

Petrol/Diesel Fumes

The fitting of a tail pipe to your exhaust will reduce the possibility of fumes entering your caravan through the front fixed ventilation points.

FIRE SAFETY

It is recommended that one dry powder fire extinguisher complying with EN 3-7 of at least 1kg capacity or equivalent is provided by the main door and a fire blanket next to the cooker. Familiarise yourself with the instruction on your fire extinguisher and the local fire precaution arrangements.

In Case Of Fire

- (i) Get everyone out of the caravan as quickly as possible using whichever exit is quickest including windows. Do not stop to collect any personal items.
- (ii) Raise the alarm. Call the fire brigade.
- (iii) Turn off the gas container valve if safe to do so.
- (iv) Retreat to a safe distance.

Fire Retardant Foams

All caravans are equipped with Polyurethane (PU) foam which are combustion modified foam cushions, mattresses and fire retardant fabric. All furnishings and fabrics used by Erwin Hymer Group UK comply with the Furniture and Furnishings (Fire Safety) Regulations. In addition all upholstery is made of fire retardant fabric.

Escape Paths

Your new touring caravan has been provided with escape paths to be used in the event of an emergency. One of which is always the main habitation door and others are the large windows to be used where necessary. Care must be taken when exiting via a window due to the potential drop to ground level.

IMPORTANT: Your attention is drawn to the notice affixed in the caravan's wardrobe advising on fire prevention, ventilation and what to do in case of fire.

Please note: Do not work under the caravan unless the corner steadies are down and the axle is supported.

YOUR CARAVAN PAYLOAD EXPLAINED

Definitions

Plated maximum technical permissible laden mass (PMTPLM)

As specified by Erwin Hymer Group UK and in compliance with the European Directive on Masses and dimensions of vehicles.

Actual MTPLM

Maximum mass of the vehicle, which takes into account operating conditions including, factors such as the strength of materials, loading capacity of the tyres etc.

Mass of the caravan in running order (MIRO)

This is the weight of your caravan as it leaves our factory plus the following:

A mass of 10kgs per gas cylinder, the cylinder number is equal to the number of connections provided at the regulator.

Personal effects payload (PEP)

This is calculated by the following formula:

$$10L + 10N + 50$$

L is the body length of the caravan in meters.

N is the number of berths.

50 is for normal equipment carried in the caravan, a sample list is given below.

Kettle	0.5kgs
Bed linen.....	6kgs
Crockery	5kgs
Saucepans.....	3kgs
Wastemaster	6kgs
Portable water container (empty)	5kgs
Waste bin.....	1kg
Cutlery	2kgs
Toilet fluid etc.....	2.5kgs
Battery	25kgs

Optional equipment payload (OEP)

This is an amount of weight provided for factory fitted options.

Please note: Any options fitted by the retailer will reduce the overall payload available to the customer.

User Payload is the sum of the PEP and the OEP.

Note: It may be possible to upgrade your Plated MTPLM to the Actual MTPLM up to the caravan being 3 years old, there is an administration fee for this service.

Note: Please ensure you never load your caravan above the plated MTPLM.

Note: Please take care to ensure you have allowed for the mass of all the items you intend to take in your caravan.

PREPARING FOR THE ROAD

CARAVAN TOWING VEHICLE WEIGHT RATIO

This ratio has a major influence on stability. It is recommended that:

- (i) The laden nose weight for your caravan should not exceed the **lower** of the following:
 - * Towing vehicles maximum nose weight,
 - * Tow bar maximum nose weight
 - * The caravan's maximum nose weight. Please refer to the caravan weight plate for this information.
- (ii) The actual laden weight of the caravan should always be kept as light as possible. The lighter it is whilst being towed on a road, the safer the outfit combination will be.
- (iii) What you are able to tow is dependent on your driving licence.
- (iv) If you are a B licence holder you can only tow a car/caravan combination of total weight not exceeding 3500kgs and the cars kerb weight must be greater than the caravans plated MTPLM.
- (v) Your driving licence category determines the weight you can tow. Please refer to gov.uk for the most up to date information.
- (vi) The greater the actual laden weight of the caravan in relation to the kerb weight of the towing vehicle the more careful and experienced the driver needs to be and the lower the speed at which instability could occur.

WARNING: It is strongly recommended the loaded weight of the caravan does not exceed the kerb weight of the towing vehicle.

LOADING

Always lower and secure the jockey wheel and the four corner steadies (with the brace provided) before entering the caravan. This will ensure that the caravan does not tip up when you are inside.

Please note: Corner steadies should not be used as a jacking device.

Internal Loading & Checks

When loading your caravan it is advisable to:

- (i) Distribute items evenly over the axle and as low as possible to optimise road holding and achieve the best possible braking effect.
- (ii) Do not overload on one side as this will cause the caravan to lean and affect the road holding and stability.
- (iii) Do not stow tins, bottles or heavy items in overhead lockers when towing. All overhead locker catches are for the purpose of keeping the overhead lockers closed and not to stop items from falling out.
- (iv) Loose articles should be stowed securely to avoid movement and possible damage.
- (v) Ensure that all lockers, cupboard doors and showers doors are closed and room partitions are secured.
- (vi) Secure all bunks (if appropriate).
- (vii) Store the main dining table in its transit position.
- (viii) Set the refrigerator for 12V operation if any fresh food is stored in it and ensure the door is locked.
- (ix) Fully close and lock all windows and rooflights. Never tow with windows on night setting.
- (x) Leave all curtains and blinds open to prevent damage in transit. If your caravan has a rear window this may aid visibility.
- (xi) Ensure you remove all items from the microwave.
- (xii) Ensure the hob lid is in the closed position.

External Loading & Checks

- (i) Gas cylinders should only be stored, correctly positioned, and secured in the gas bottle locker. The gas should be turned off.
- (ii) The leisure battery is stored and secured in the battery locker box, set into the tray provided and secured.
- (iii) Any external connections (battery chargers, connecting cables etc), should be disconnected and stowed.
- (iv) Check that all exterior locker doors are secure and locked.
- (v) Secure and lock the main caravan entrance door.

PRE-TOW CHECKLIST & HITCH-UP

Having loaded the touring caravan and secured the lockers and main entrance door:

- (i) Check touring caravan wheel bolts are torque tightened to the required level (See Index - Changing a Wheel).
- (ii) Check tyre pressures (Refer to the Technical Data Sheet) and tyre condition for roadworthiness.
- (iii) Ensure the jockey wheel is down, in good contact with the ground, clamp tightly secured, and the caravan handbrake is fully on.
- (iv) Raise the corner steadies.
- (v) Reverse the car close up to the caravan's hitch. It is advisable to seek assistance to guide you so that the car tow ball aligns with the caravan's hitch. (Use of the caravan handbrake is advised. Extreme caution should be taken if manoeuvring the caravan down hill or on wet, slippery surfaces).
- (vi) Make sure the jockey wheel height is sufficient for the hitch head to clear the towing vehicles tow ball.
- (v) Manoeuvre the hitch head over the tow ball and lower the jockey wheel using the winding handle, until the hitch head opening sits comfortably over the tow bar ball.

CABLES

For peace of mind, you may wish to check the ability of the cables to be able to cope with towing the vehicle at extreme angles before setting off. To do so, position the vehicle at alternate extreme angles and check that the cables do not pull too tight, as they are liable to stretch or become unplugged. No cables should be allowed to touch the ground as they will wear and become damaged and ineffective.

Please note: If having followed this advice, you feel you cannot achieve a satisfactory cable arrangement, consult your caravan or tow bar supplier or service agent.

Stabiliser operating instructions

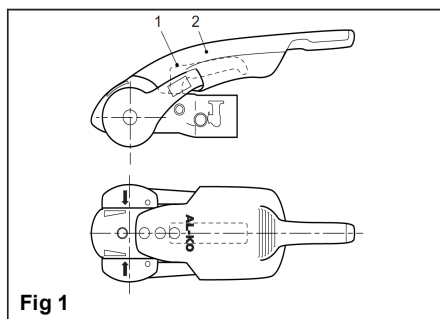


Fig 1

Coupling handle (Fig. 1/Item 1), Stabiliser Lever (Fig. 1/Item 2)

The Stabiliser lever (Fig. 2/Item 2) must be in the uppermost position (open).

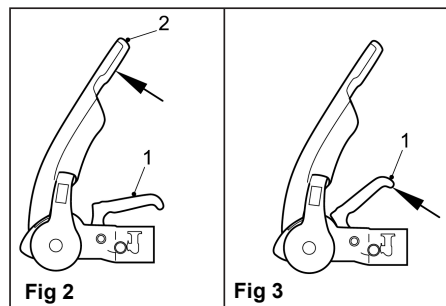


Fig 2

Fig 3

Coupling

- Pull the coupling handle (Fig. 3/Item 1) up in the direction of arrow. The coupling mechanism has an open position ie. as

long as the AKS 3004 is not placed on the ball, the handle will remain open. Put the opened coupling onto the clean towball. The handle must now make an audible click and return to the flat position.

WARNING: The coupling is correctly engaged when the green edge of the safety indicator button is visible (Fig. 4/Item 3).

WARNING: Always ensure that the jockey wheel is fully raised and secure before commencing any journey.

Stabiliser Unit:

- To operate the Stabiliser (once coupled to the towball), simple press the stabiliser lever down as far as it will go (Fig. 4/Item 2).

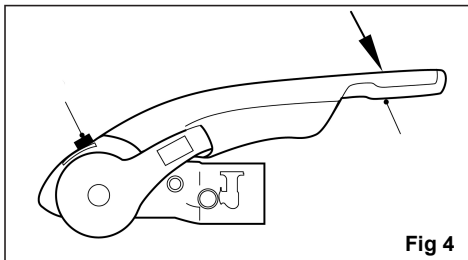


Fig 4

Uncoupling

- Pull the stabiliser lever handle up as far as it will go, open the coupling handle and lift the AKS 3004 from the towball. With larger nose loads, coupling and uncoupling can be made easier by using the jockey wheel to assist lifting.

The friction pads are pressed against the towball and hence generate a stabilising/damping force. These pads are therefore subject to wear over time, however they will have a long service life (circa. 30,000 Miles), provided they are well maintained and kept free of grease/dirt.

Checking the efficiency of the left/right friction pads:

- 1) Couple up AKS 3004
- 2) Open Stabiliser lever (Fig. 5/Item1).

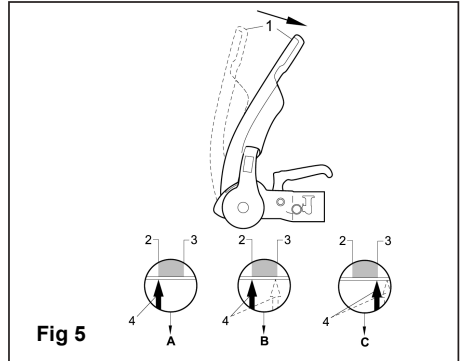


Fig 5

- 3) Close Stabiliser lever until resistance is felt (ie friction pads are in contact with the ball but not yet under pressure).
- 4) If the arrow on the arm (Fig. 5/Item 4) is before or on the marked area (Fig. 5/Item 2) the friction pads are still as new (See A)
- 5) The arrow on the arm should lie between the marked area on the soft dock (See B)
- 6) If the arrow on the plate reaches or passes the marked area on the soft dock then the friction pads need replacing (See C).

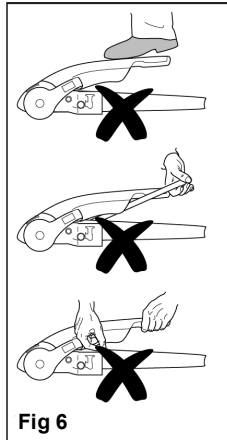
It is not necessary to adjust the friction pads.

Manoeuvring operation

For easier manoeuvring (on campsites etc), pull the stabiliser lever to the 'up' position.

Please do not use the stabiliser lever as an manoeuvring handle. Please use the handles on the Caravan or fit the AL-KO manoeuvring handle to your jockey wheel (available separately).

- 1) During opening or closing, the AKS must only be operated by one person.
- 2) Press stabiliser lever down by hand force only DO NOT use your foot or an extension bar, this will damage the components (Fig. 6).
- 3) When opening or closing the stabiliser lever, please ensure your hand does not touch the coupling handle - you may accidentally trap your fingers! (Fig. 6).

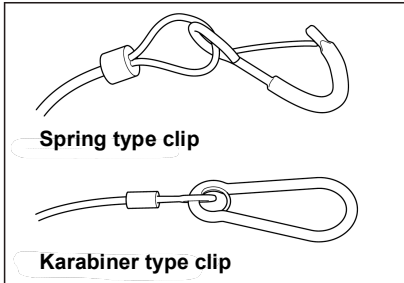


BREAKAWAY CABLE

The law requires that any trailer with a MTPLM (GVW) exceeding 750 kg must have a braking system and it must work. If such a trailer becomes detached from the tow vehicle then these brakes must be applied automatically by way of the breakaway cable.

This breakaway cable is an important part of the management of the braking system and when the trailer is built the braking system is part of the certification process for the safe use of the trailer - so any replacement parts must be equivalent to the original parts fitted.

There are two types of breakaway cable in use in the UK. One uses a spring clip, the other uses a Karabiner clip.



Looking at the two clips it is easy to see that there is a difference.

The spring clip type is designed to be hooked back over the breakaway cable when it is fitted to the tow vehicle and must always be used this way.

The Karabiner type is designed to be secured onto a mounting point on the tow vehicle, it does not need to pass back over the cable to secure it in place (but can if necessary).

So how should the breakaway cable be secured to the tow vehicle? In the absence of specific advice from the manufacturer/supplier follow these simple guidelines:

Fixed tow ball systems

The cable with spring clip should be passed behind the towbar assembly (where cable length is sufficient) and then clipped back on itself. The cable should be in as straight a path as possible to ensure correct operation.

When the breakaway cable is attached, check to ensure:

- that the cable cannot snag in use on the trailer coupling head, jockey wheel, or any accessory e.g. a stabiliser, bumper shield, cycle carrier etc.
- that there is sufficient slack in the cable to allow the towing vehicle and trailer to articulate fully without the cable ever becoming taut and applying the brakes.

Where a designated attachment point is provided on the towbar:

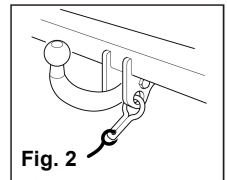
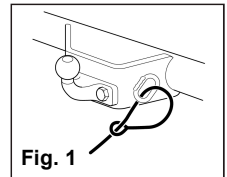
Either

- Pass the cable through the attachment point and clip it back on itself (Fig. 1).

Or:

- Attach the clip directly to the designated point (Fig. 2). This alternative must be specifically permitted by the trailer

manufacturer since the clip may not be sufficiently strong for use in this way.



Where NO designated attachment point is provided on the towbar:

Fixed ball

Loop the cable around the neck of the towball. If you fit the cable like this, use a single loop only (see figs 3A and 3B).

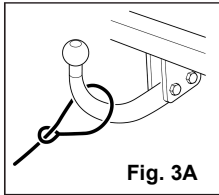


Fig. 3A

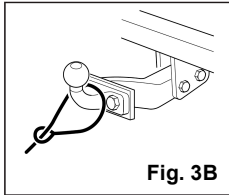


Fig. 3B

Detachable ball

You must seek guidance on procedure from the towbar manufacturer or supplier.

Where there is insufficient cable length then the cable should pass around the base of the tow ball and then be clipped back on itself.

Detachable tow bar systems

Vehicles with a detachable tow bar system may have a securing point provided on the tow bar assembly. This securing point should be part of the towbar assembly fitted to the tow vehicle but this securing point may not be large enough to allow the spring clip type fastener to pass completely through, do not be tempted to clip onto the securing point directly. Where this is the case, or where there is no hooking point provided, then the cable should pass around the tow ball assembly and then clipped back on itself.

Where the towbar provides a securing point and a Karabiner type fastening is provided, then this can be secured to the securing point. Make sure that it is completely closed to ensure that it operates correctly.

Be careful to check that the cable does not sag so much that it could drag on the ground - if it does it may become damaged or catch on debris on the road surface. Also ensure that the cable is long enough to allow for any sharp turns, otherwise the cable may inadvertently apply the trailer brakes and this could cause damage to the brake components.

Remember to check the breakaway cable for any signs of damage. The cable is designed to apply the trailer brakes and then snap once the brakes are applied so any damage may result in premature failure and the brakes not being properly applied.

And ... remember ... Many inadvertent detachments occur at low speed - normally as a result of the hitch head not being engaged properly onto the tow ball assembly. A low speed detachment may not result in the breakaway cable operating properly - so ALWAYS check that the head is fully secure before setting off.

TOWING AND DRIVING

REVERSING

It is advisable to have a second person assisting when reversing the caravan.

Start practising by choosing a left-hand bend for ease. Reverse slowly; turning the wheel, initially the opposite way to the direction you want the caravan to go.

Now the front of the caravan is nudged out and is moving the rear in the intended direction. Take care not to hit the caravan with the car!

Midways through the manoeuvre, when the caravan is correctly angled, reduce speed to a crawl and gradually apply opposite lock. Make the car follow the caravan round then finally straighten up.

Please note: Proficiency at reversing can only be achieved with practice.

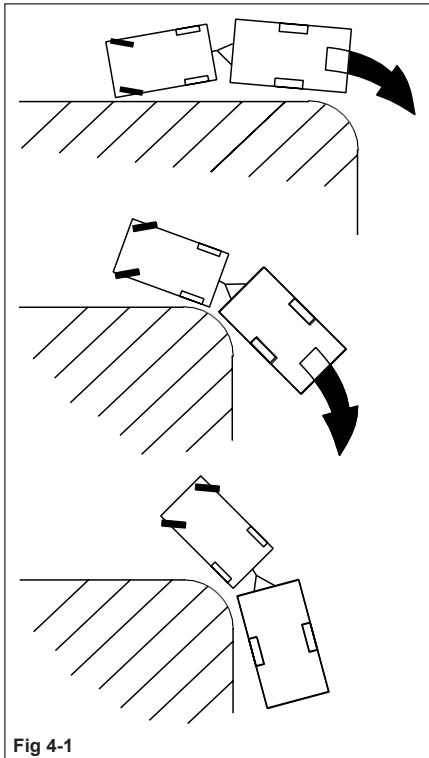


Fig 4-1

SPEED LIMITS

- Always adhere to the speed limits in force.
- When national speed limits apply, when towing on a single carriageway, the speed limit is reduced to 50mph. Dual carriageway and motorways, the speed limit is reduced to 60mph.

SETTING OFF

- (i) Pull away smoothly in the towing vehicle. Allow more engine speed to produce the power to move the additional weight of the caravan.
- (ii) Avoid wear and tear on the clutch and transmission by taking extra care not to 'ride' the clutch.
- (iii) Change gears smoothly. Try not to jerk the clutch.

CARAVAN HANDLING

- (i) Ensure you have an adequate view of the road behind you. You must fit towing mirrors if your caravan is wider than the rear of your tow vehicle.
- (ii) Give yourself more room when cornering to ensure your caravan wheels do not strike the kerb.
- (iii) When passing other vehicles, allow more than the normal clearance for driving solo.
- (iv) Allow longer to obtain a fast enough speed to pass other vehicles.
- (v) Allow for the vehicle being twice its normal length. Do not suddenly swing out.
- (vi) Carry out all manoeuvres as smoothly as possible.
- (vii) Use the wing mirror to check the caravan has clearly passed other road users when overtaking and changing lanes.
- (viii) Adverse weather conditions may affect the steering and braking characteristics of your caravan.

MOTORWAY DRIVING

Important Points:

1. Caravans may not be towed in the outside lane of a three or four lane motorway.
2. Reduce speed:
 - a) In high or cross winds
 - b) Downhill
 - c) In poor visibility
3. High sided vehicles cause air buffeting, so extra care must be taken when passing or being passed. As much space as possible should be given to avoid the drag created by the high sided vehicle.
4. When going uphill, change gear in good time. If your car is running short of power or is behind a slower vehicle, keep well into the nearside and out of the way of other vehicles. Remember that some hills can be ascended with relative ease often pose an unexpected challenge if you come to a standstill in traffic and then have to re-start from scratch.
5. When going downhill, take extra care to ensure you do not gain speed. This can be avoided by changing down a gear and reducing speed as you approach the slope. Don't leave this gear change too late. Using low gears throughout the descent will reduce the strain on the car's brakes. For automatics, you may need to manually change to a lower gear in anticipation of the effect caused by the gradient change.

TOWING COVERS

We do not recommend that you tow with covers on as they can obscure the road lights fitted.

Tyre and wheel checks

Tyres are an essential part of the safe use of your caravan and it is important that they are properly maintained to make sure that they do what they are intended to do - carry the load and grip the road as well as bringing you and your caravan to a safe stop.

So how do we know we have the correct tyres for our caravan and how do we know that they are still safe to use?

When your caravan was first manufactured the tyres fitted were chosen because they would carry the load that the caravan was designed to carry.

Note that it may be possible to increase the maximum technically permissible laden mass (MTPLM) of the caravan depending on the capacity of the chassis but it is essential that the tyres are checked to verify that they are suitable for the extra loading if this option is taken. If their loading capacity is less than the rating necessary for the increased MTPLM, they will need to be replaced.

Detailed information on the load and speed rating is marked on the side of the tyre.

Looking at the tyre not only tells us that they are the right ones for the leisure vehicle, it also tells us how old the tyre is. It is strongly recommended that tyres are renewed when they are five years old and certainly by seven years. The tyre data is only shown on one side, so it may be necessary to check the information on the hidden side.

It is unlikely that caravan tyres will wear out before they reach the end of their recommended life, but all tyres deteriorate over time due to the effects of ultra-violet radiation and atmospheric ozone, so whilst the tyre may still seem to be in good condition with plenty of tread wear left, there is an increased risk of sudden failure and they need to be changed due to ageing.

Many of the tyres checked out on the road in Police checks are in a dangerous condition and using tyres like this increases the potential for a tyre failure / blow out or other incident and could result in a fine and penalty points being added to your licence.

Check your tyres for cuts / lumps, crazing and cracks as well as wear (both on the outside and inside walls) - don't forget to check the pressures when the tyres are cold.

For further information about tyres see www.tyresafe.org/tyre-safety/caravan-tyre-safety

ARRIVING ON SITE

CHECK SITE REGULATIONS

On arrival at a site, you should always check the site regulations. This will help avoid any unnecessary conflict with site management and other site users.

WARNING: Care has to be taken to prevent grounding when traversing ramps or other ground obstacles.

SELECTING A PITCH

Carefully select where you wish to place your caravan. The site should be as level as possible, preferably not under or near trees, well drained and away from possible boggy areas. Consider how you will move the caravan when it is time to leave the site. On sloping ground it is better to pitch facing downhill, especially during wet weather.

PARKING ON A REVERSE-SLOPING SITE OR STEEP HILL

For successful parking on a reverse slope or steep hill, the operator need only apply the handbrake with one hand while gently but purposely inching the caravan a small distance backwards with the other.

CAUTION: Never enter the caravan without first lowering the four corner steadies with the brace provided. It is recommended that power tools such as impact wrench or drill should not be used to lower corner steadies. Corner steadies should not be used as a jack. Take care not to lift the caravan wheels.

ENTERING AND EXITING THE CARAVAN

Due to the height to the entrance door, it is strongly recommended that you use a step to enter and exit your caravan. A suitable step is provided with your caravan and can be found within your kit box. Please ensure your step is placed in front of the entrance door and is on sound and level ground before use.

SIDE-TO-SIDE LEVELLING (ALL EXCEPT BUCCANEER)

A quick glance at your pitch should tell you if you are likely to need side to side levelling i.e. levelling across the axle. On uneven ground lateral levelling is accomplished by the use of a leveller jack or ramp and a spirit level placed 'across' the caravan floor (not supplied).

Leveller Jack

Place the leveller jack, folded flat, in front of the wheel needed to be raised to level the axle. Tow the caravan onto the leveller jack and adjust the height until the spirit level shows that the caravan is laterally level.

Ramp

- (i) Reverse onto your pitch about 30cm (12") further back than you wish to end up.
- (ii) Then place the levelling ramp in front of the wheel that needs to be raised.
- (iii) Place a spirit level parallel to the axle on the A-frame or just inside the caravan door.

It helps to have two people at this point. One should drive the car very slowly forward moving the caravan wheel up the ramp, and the other should indicate when the spirit level bubble is in the middle.

Whichever method you use, and once level:

- (i) Apply the caravan handbrake and chock the caravan wheel if necessary.
- (ii) Lower the jockey wheel to ground level before unhitching. (See index uncoupling)
- (iii) If necessary use a load spreader, such as a big foot or alternative suitable device.

You should then park your car, usually next to the caravan furthest away from the door side.

Please note: On upward facing pitches when the hydraulically damped drawbar of the hitch becomes fully extended, it will be necessary to compress the drawbar slightly in order to achieve unhitching. With the caravan brake on, reverse the towing vehicle about 2.54cm (1") to release hitch lock tension and using the jockey wheel adjustment, unhitch the caravan as previously described.

FRONT & BACK LEVELLING (ALL EXCEPT BUCCANEER)

This should be done only when the lateral levelling is complete.

- (i) Place the spirit level pointing front to back just inside the caravan door or on the A frame.
- (ii) Then raise or lower the jockey wheel until the caravan is horizontally level.

Please note: If there is a significant front to back slope, you may need to place a block under the jockey wheel.

- (iii) Next, wind down the corner steadies onto load spreaders (blocks of wood a minimum of 15.25cm (6") square or 'Big Foot' steady attachments) until they are firmly set against the ground.

Please note: It is possible on very uneven sites that when fully extended blocks may be required under the corner steadies to achieve this. It is important that the caravan is correctly levelled to ensure the correct working of the refrigerator, cooker etc.

- (iv) Now that your caravan is level, place the caravan step in front of the door ensuring that it is stable and safe to use.

THE E&P HYDRAULICS LEVELSYSTEM (BUCCANEER ONLY)

General Operating instructions

Before taking into service, the following points must be observed:

- The noseweight (A) may not exceed the max. 100 kg.
- Make sure that the ground is sufficiently even and that there are no holes and/ other obstructions present.
- Place the caravan on a firm footing, otherwise the axle supports may sink into the ground.

Note: It is important that when you use the system the caravan is standing facing slightly downhill (B).

- Never use the system when there is anything attached to the caravan, such as an awning or a canopy.
- Never use the Levelsysteem in automatic mode when the caravan is attached to the vehicle

The following safety precautions must be observed when positioning the caravan.

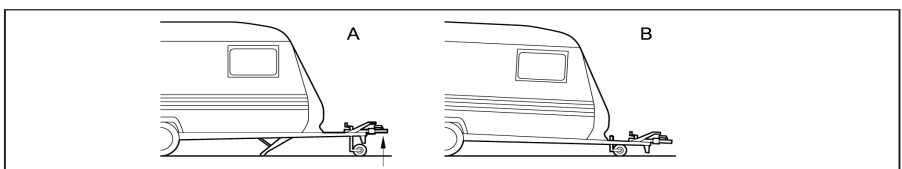
- Apply the caravan handbrake securely.
- Make sure that when the system is being operated, no-one is present in the vicinity of the caravan.
- Make sure that when levelling is being carried out, on-one is in the caravan.
- An acoustic signal will be sounded during the levelling process.
- The levelling program can be stopped at any time by pressing the ON/OFF button on the Touchpanel.

WARNING: Before driving off, check to make sure that all supports have been withdrawn.

Safety warnings

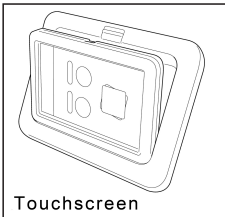
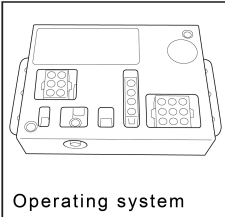
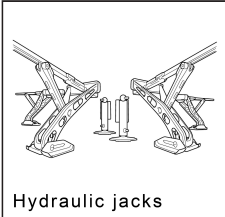
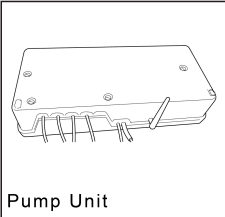
Not observing the following warnings may lead to damages to the caravan and/or serious physical injuries.

- Using the E&P hydraulics levelling system for other purposes than supporting the caravan is officially forbidden according to the E&P Hydraulics Limited warranty.
- This product is exclusively developed as a levelling system and may not be used as a support for other work under the caravan.
- When the system is operating, all persons and animals should keep their distance.
- Body parts (e.g. hands and eyes) should never come into contact with released fluids. Oil leaving the hydraulic levelling system may be under high pressure and could cause serious injuries to the skin. Consult a doctor immediately in case of accidents.
- The caravan should be parked on a solid, level and non-slippery surface. The parking location must be free of holes of waste and surrounding objects.
- If the caravan is parked on very soft soil, you must place a support plate under each jack in order to distribute the weight. Alternatively you can use the E&P Footplate cover set (4100900).
- In case of repairs/malfunctions to the hydraulic Levelsysteem: Never try to repair it yourself, but consult your installer or dealer.
- Fully read this user manual, before using the hydraulic levelling system.
- After deploying the hydraulic Levelsysteem **ALWAYS** make an inspection tour around the caravan. Just to be sure the caravan stands stable (all hydraulic jacks are on the ground). The same rule applies after retracting the system before you drive away; always make a final inspection tour of the caravan.



Remote Control: Touch Panel

System Components

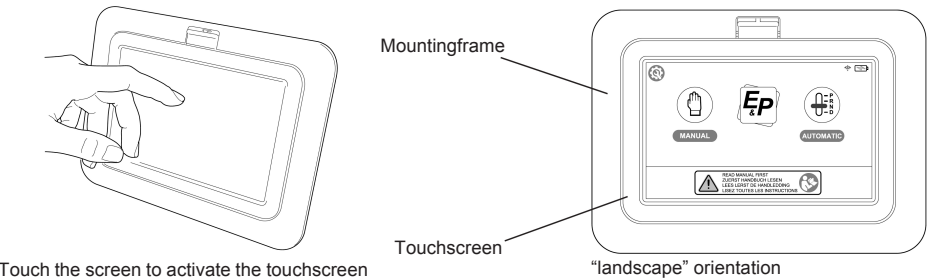


In advance

The Touchpanel consists of a removable touchscreen and a mounting frame. The touchscreen can be used in a fixed (connected to the vehicle) and remote/handheld situation. (separated from the mounting frame in the vehicle).

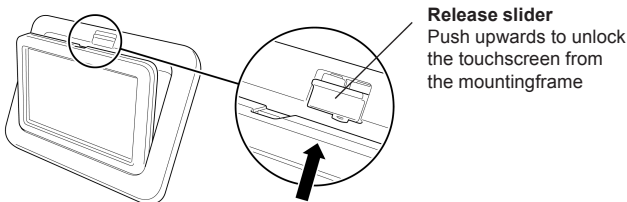
Fixed situation

In the situation the touchscreen is built in into a mounting frame, you only have to touch the screen to activate the touchscreen. By doing this the startup screen will appear in a "landscape" orientation.

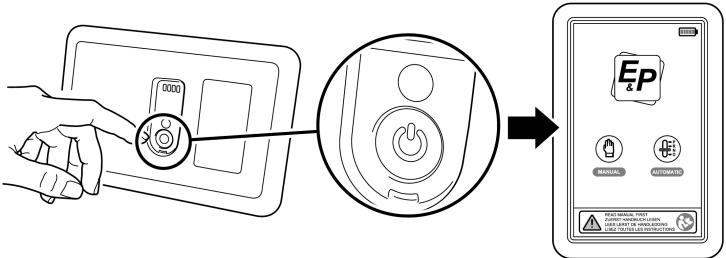


Remote situation

The touchscreen could also be taken out of the mounting frame by pushing the release slider upwards. After doing this the touchscreen functions as a remote control for operating the Levelsystm.



After removing the Touchscreen from the mountingframe, the touchscreen must be activated by pushing the ON/OFF button on the back-side of the touchscreen. By doing this the startup screen will appear in a "portrait" orientation.

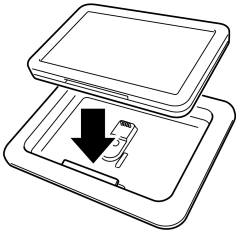


ON/OFF Button
Push button to activate the touchscreen

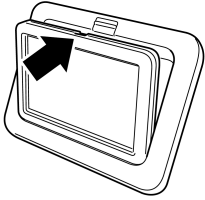
"portrait" orientation

Replacing the touchscreen

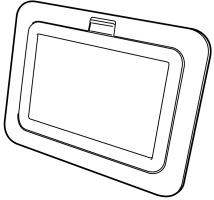
When replacing the touchscreen in the mounting frame, the touchscreen must be placed over the upright rib located at the bottomside of the mounting frame. After this the touchscreen must be pushed backwards into the mounting frame. A slight click of the release slider indicates that the touchscreen is properly locked in the mounting frame.



place the touchscreen over the upright rib



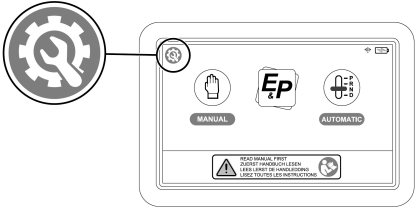
push the touchscreen into the mountingframe



READY: the release slider locked the touchscreen in the mountingframe

First time operating

When you use the E&P Hydraulics touchscreen for the first time, it is wise to first determine your personal language and access code settings. This is possibly by pressing the **"CONFIGURATION"** icon at the top left location of the screen.



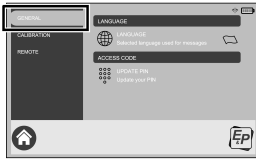
push the configuration icon

After pushing the configuration button a screen will appear in which you have three options: General, Calibration and Remote. Before entering one of these options you have to enter 4 times "0000" (factory setting) and OK

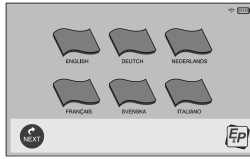


push pincode (0000) and OK

After pushing the icon **"GENERAL"** it is possible to make your personal choice for the preferred display language and **NEW PIN**/access code. These two options will be found after pressing the icons **"LANGUAGE"** AND **"ACCESS CODE"**. After doing this the touchscreen is ready to use.



press general



set language

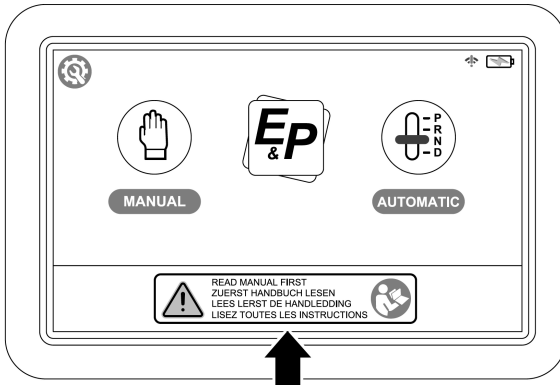


enter new pincode

Note: The Calibration (level-point) is set during the installation procedure, therefore you should not need to change this setting. However, if you would like to set a different level-point, you can follow the procedure laid out in the E&P Hydraulics User manual supplied with the system.

Control functions on the touchscreen

Below you can see the appearance of the start screen of the touchscreen. By pushing the icon **"AUTOMATIC"** or **"MANUAL"** you are able to operate the hydraulic Levels system. On the start screen there are also some more symbols visible - the explanation of these symbols is below:



Appearance of the start screen

Note: 'READ MANUAL FIRST' will be displayed on the start screen, with the advice to carefully read the manual before operating the Levels system for the first time



CONFIGURATION icon

- change settings



NO SIGNAL indicator

- only appears in remote use of the touchscreen, when there is no communication between touchscreen and operating unit.



BATTERY STATUS indicator

- 5 lines indicates “fully loaded”



BATTERY STATUS indicator

- Battery is charging



BATTERY STATUS indicator

- Full empty



MANUAL levelling indicator

- Brings you to the next screen of the manual levelling procedure

MANUAL



AUTOMATIC levelling indicator

- Brings you to the next screen of the manual levelling procedure

AUTOMATIC



NOTIFICATION indicator

- Appears in the chosen language and brings you to the user manual in the chosen language

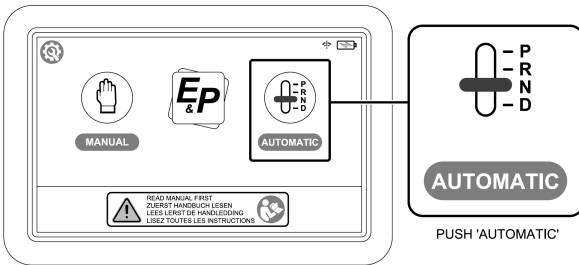
Operating the Levelsystem

AUTOMATIC Levelling

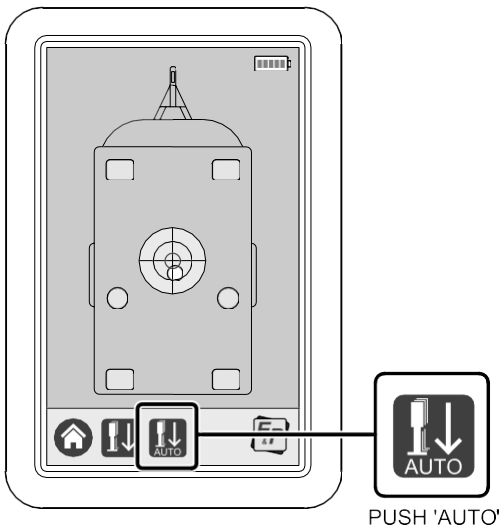
Before starting the automatic levelling procedure: make sure that the handbrake is engaged. Also ensure that everyone has exited the caravan - including yourself.

IMPORTANT: Before levelling the vehicle (in case of considerable slope) it is advisable to put some extra materials (e.g. wooden plates) under the footplate of the jacks on the lower side, this with the aim to compensate on extreme height difference. This will avoid the risk that the system is not able to level the vehicle due to large difference in height. When the difference in height is too large the hydraulic supports can come to the end of their stroke without achieving a level position.

Step 1 Push the button “**AUTOMATIC**” to activate the Levelsystem in automatic levelling.



Step 2 Push the button “**AUTO**” to activate Levelsystem further in automatic mode. Now the hydraulic pump starts working and the hydraulic levelling procedure starts automatically by extending the jacks.



After pushing the **"AUTO"** button, on the bottom of the screen a **"STOP BUTTON"** appears. During operating with this button you are able to stop the automatic levelling procedure. In case you have stopped the procedure you have to press the button "retract all jacks" to start the procedure again.

During this automatic levelling procedure you see the six GREY areas/boxes (indicating the hydraulic jacks in withdrawn position) changing in colour from YELLOW (jacks in operation) to RED (jacks fully extended to the ground).



Jack(s) in withdrawn position

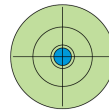
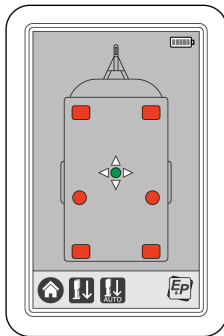
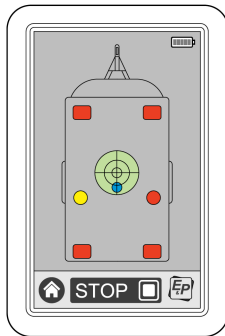


Jack(s) in operation



Jack(s) in extended position

During this operation you will see a **"BLUE CIRCLE"** in the middle of the spirit level changing position. When the vehicle is in a level position the BLUE area is located in the middle of the spirit level.



LEVELLED POSITION

When the automatic levelling procedure is complete, the **"SPIRIT LEVEL"** shows a blue circle centered in the middle. Depending on the angle of the terrain and type of vehicle, the automatic levelling procedure takes about 1 minute.

When ready, the touchscreen will switch OFF automatically.

Notes:

When the vehicle stands too skewed, the vehicle cannot be automatically levelled. Now, you have two options: Stop the levelling procedure and place the vehicle on a flatter surface and start again with automatic levelling procedure or let the vehicle stand as it is and go further with manual levelling procedure (next chapter).

In case something is "wrong" to make the automatic levelling procedure able to work some "warning slides" may appear on the touchscreen. The most common are:

When there is insufficient or no battery voltage, the warning slide **"LOW VOLTAGE"** appears.



When the vehicle leans too steeply, the warning slide **"SLOPE TOO STEEP"** appears.



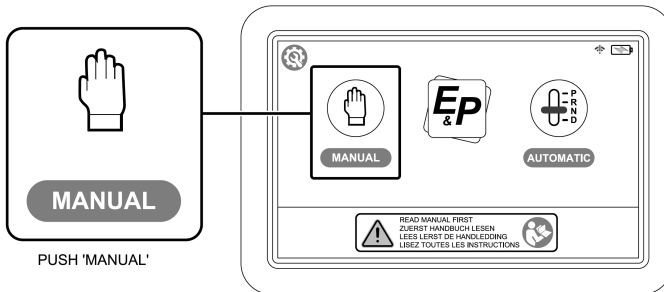
MANUAL levelling

Before starting the manual levelling procedure: make sure that the handbrake is engaged. Also ensure that everyone has exited the vehicle, including yourself.

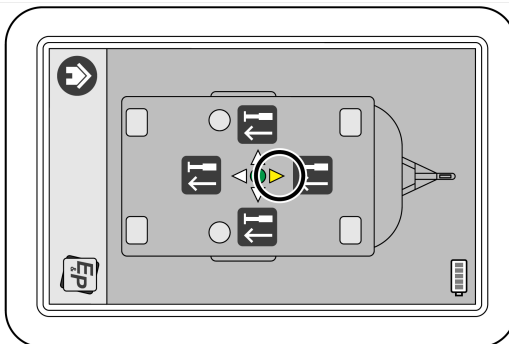
The manual levelling function is mainly used when automatic levelling is not possible due to a large tilt of the vehicle. With the help of this feature it is also possible to change the position of the vehicle; think of your sleeping comfort. Most people prefer to sleep with their head up slightly. Depending on the orientation of the vehicle with this feature you can manually adjust the angle where necessary.

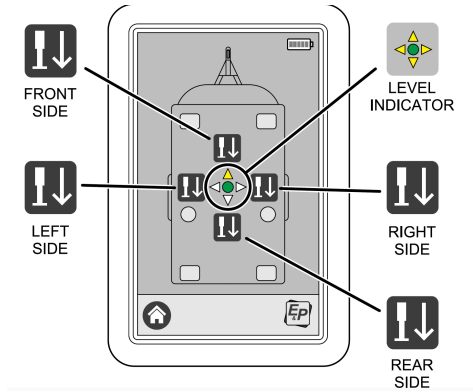
IMPORTANT: Before levelling the vehicle manually (in case of considerable slope) it is advisable to put some extra materials (e.g. wooden plates) under the footplate of the jacks on the lower side, this with the aim to compensate on extreme height difference. This will avoid the risk that the system is not able to level the vehicle due to large difference in height. When the difference in height is too large the hydraulic supports can come to the end of their stroke without achieving a level position.

Step 1 Push the button “**MANUAL**” to activate the Levels system in manual levelling.



After pushing the button “**MANUAL**” to activate the Levels system working in manual mode the screen shown below will be visible. Depending on the position of the vehicle, one or more yellow arrows light up.

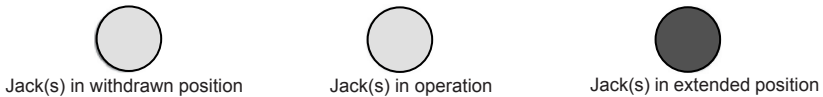




Step 2 Lift the vehicle at the axle by pushing the button **"LEFT SIDE"** button. The hydraulic pump starts working, hold the button down until the left axle jack has reached the ground. Hold the button down a little longer to allow the vehicle to lift approximately 3cm on the left side. Repeat the same procedure with the right side, by pushing the button **"RIGHT SIDE"**.

IMPORTANT: Always level the vehicle on the axle first (left/right side).

During this operation you see the six GREY areas (indicating the hydraulic jacks in withdrawn position) changing in colour from YELLOW (jacks in operation) to RED (jacks fully extended to the ground).



Step 3 Push the button **"FRONT SIDE"** and hold it down until the front jacks have reached the ground. Hold the button down a little longer to allow the vehicle to lift apr. 3-5 cm on the front side. The illumination of one or two ORANGE arrows on the indicator LED central on the touch screen shows the position of the vehicle. In the unlikely event that the vehicle is already level, then the indicator LED lights up GREEN directly.



Step 4 Push the button **"REAR SIDE"** and hold it down until the rear jacks have reached the ground. The illumination of one or two ORANGE arrows on the indicator LED central on the touch screen shows the position of the vehicle. In the unlikely event that the vehicle is already level, then the indicator LED lights up GREEN directly.



Step 5 Depending on the lean of the vehicle with the aid of the buttons: "**FRONT SIDE**", "**REAR SIDE**", "**LEFT SIDE**" OR "**RIGHT SIDE**" level the vehicle.

Keep each button pressed until the level system automatically stops levelling; the ORANGE arrow(s) on the indicator LED will go out automatically at this point.

Note: When two orange arrows light up, level the vehicle gradually, not first completely levelling one side until the level system stops and then completely levelling the other side. Perform this action(s) in small (alternating) steps. In this way the system is working optimally.



Press button "**FRONT SIDE**" if the orange arrow is pointing to the front side of the vehicle.



Press button "**REAR SIDE**" if the orange arrow is pointing to the rear side of the vehicle.



Press button "**LEFT SIDE**" if the orange arrow is pointing to the left side of the vehicle.

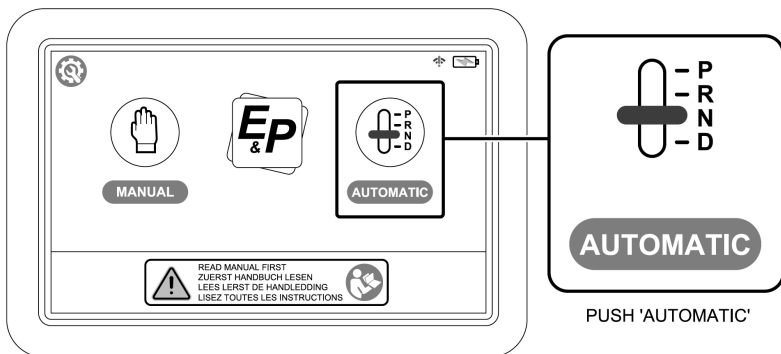


Press button "**RIGHT SIDE**" if the orange arrow is pointing to the rear side of the vehicle.

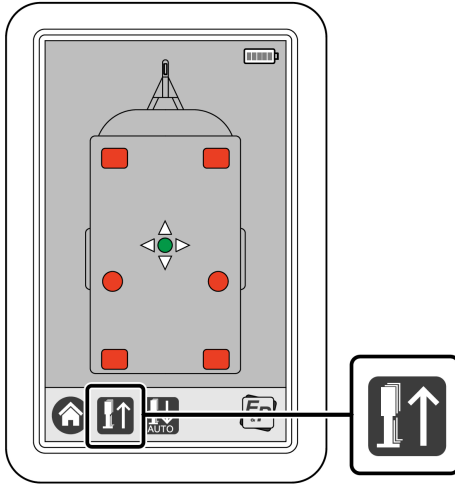
Retracting the jacks

The jacks can only be retracted in the "**AUTOMATIC**" mode:

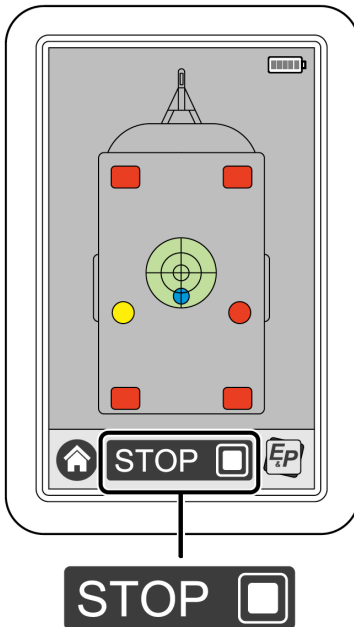
Step 1 Push the button "**AUTOMATIC**" to activate the system.



Step 2 Push the button 1 time to **"RETRACT ALL JACKS"**. Now the hydraulic pump starts working to start retracting the jacks.

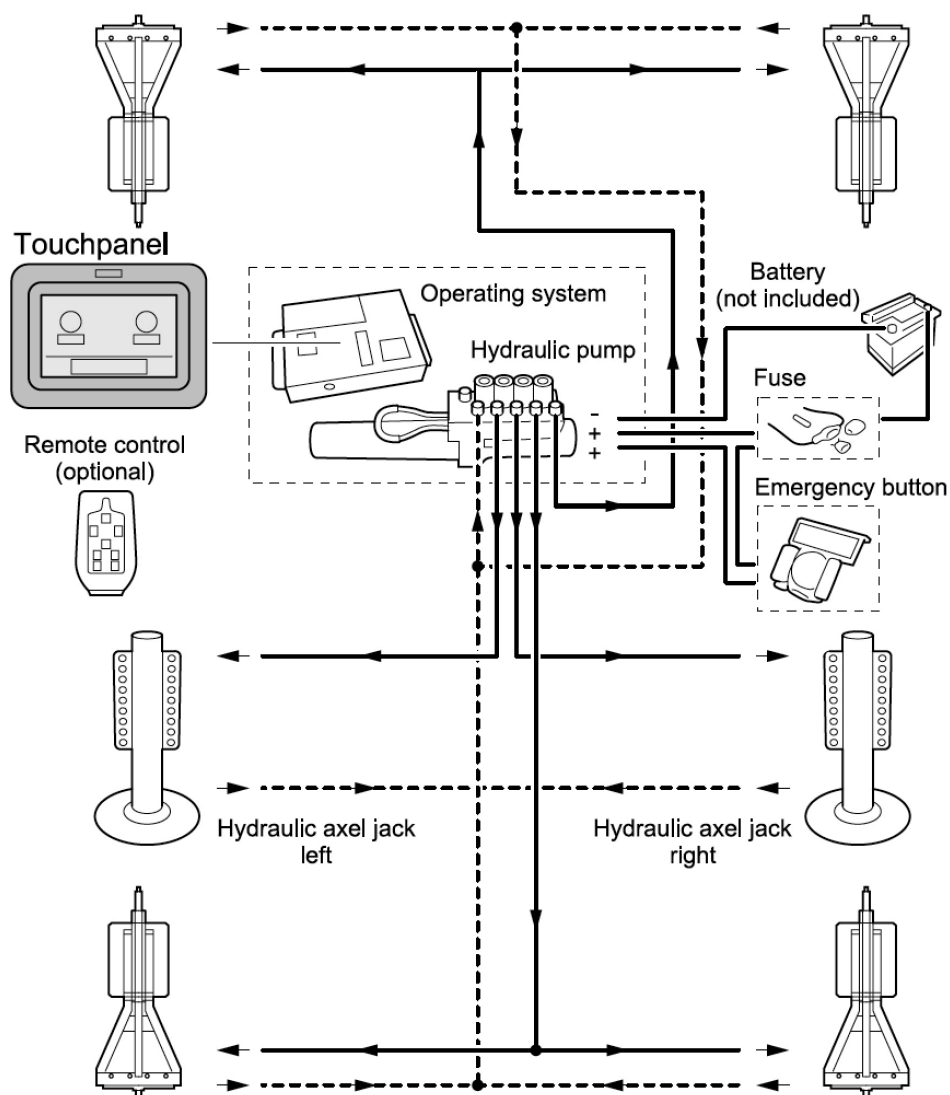


By pushing the button **"RETRACT ALL JACKS"** a **"STOP"** sign appears on the screen, this is to give the user the possibility to stop the retract procedure immediately.



Schematic diagram of the hydraulic Levelsystem

Below the schematic view/diagram of the E&P Hydraulics Levelsystem.



Remarks and recommendations

Below is an overview concerning remarks and recommendations (tips) of the hydraulic Levels system:

- After 4 minutes of no operation, the system will switch off automatically.
- The automatic levelling cycle can only be started after all jacks have been retracted. If the jacks are not retracted when the automatic cycle starts, the system will do this automatically. So it is not possible to make short adjustments to the jacks; the system will always first completely retract its jacks.
- During winter conditions (e.g. in snow and ice) put something (e.g. a piece of carpet) under the jacks to avoid sliding.
- Manual operation is mainly recommended for uneven surfaces.
- In manual operation, all jacks should always be extended and should have ground contact before levelling starts.
-

The system can't handle all angles (limit in levelling). The limit values differ per caravan - depending on the length of the caravan. If the system makes a slope angle that is too big and no longer responds to requests for automatic levelling, we recommend bringing the vehicle as close as possible to the zero point in manual mode.

- All normal functions of the system are switched off in error mode.
- At a low battery voltage, the system will automatically switch off.
- This warranty does not apply to physical damage, damage as a result of force majeure, in case of commercial use or adaptation of the product or for products that are sold as a special offer and/or 'with defects'.
- This warranty will become invalid if the product's identification criteria, which were attached in the factory, are changed or removed.

Troubleshooting

In case of an error message, check the caravan is not standing too high at the front (jockey wheel must be lowered), whether the battery has sufficient voltage, whether the oil level is correct, whether there is any damage to the jacks and check all the cables.

If this does not lead to a solution for the fault, the fault could be located in the drive units. As the drive unit does not have any repairable parts, you should contact your E&P Hydraulics dealer/installer.

Under normal circumstances, the touch panel is off and the unit will only respond by pressing the button "ON/OFF" (on the back-side) switching the Level System on.

Problem	Possible Causes	Solution(s)
<ul style="list-style-type: none"> The system fails to start 	<ul style="list-style-type: none"> Battery voltage low. Charger is defective or there is no voltage being supplied. 	<ul style="list-style-type: none"> Recharge the battery
<ul style="list-style-type: none"> The red battery lamp lights up. 	<ul style="list-style-type: none"> Battery voltage low. Charger is defective or there is no voltage being supplied. When the red battery lamp lights continuously, the installation is switched off for 4 minutes). 	<ul style="list-style-type: none"> Recharge the battery
<ul style="list-style-type: none"> The support jacks do not extend towards the ground when the pump is running. 	<ul style="list-style-type: none"> Oil level too low or oil in the system. Valve or pump does not work Between the operating system and the valve there is no electrical contact 	<ul style="list-style-type: none"> Check for any oil leaks. Clean, repair or change Check cables for voltage loss. Repair if necessary
<ul style="list-style-type: none"> When the vehicle leans too steeply the warning slide "SLOPE TOO STEEP" appears. 	<ul style="list-style-type: none"> Nose of the caravan is too high. 	<ul style="list-style-type: none"> Lower nose by reducing height at the jockey wheel.

IMPORTANT: For all other reports and/or malfunctioning of the system, please contact your dealer/installer.

Maintenance

The E&P Hydraulics Level System does not have parts that need to be maintained periodically. When parts have been taken apart, the warranty will become invalid. If necessary, parts could be substituted, repaired and/or exchanged (warranty).

WARNING: If working under the caravan, ALWAYS secure the caravan by placing suitable stands underneath. By not doing this you create a real danger of personal injury or serious accident.

Preventative Controls

- Periodically checking the hydraulic oil level. (ONLY by dealer/installer) - The hydraulic oil (type: Pentosin CHF 11S) should be checked after approximately 36 months.
- Periodically check the electronic cables and connections.
- Periodically check the hydraulic jacks:
 - Good cleaning of the jacks.
 - Clean the stainless steel cylinder (piston rod) and spray with a silicone lubricant.
 - Remove dirt from the stainless steel foot plate (especially at the bottom, this is the area your caravan stands on)
 - Remove dirt, sand, mud and other contamination that settles during use, it may obstruct the operation of the hydraulic levelling system.
 - If the jacks remain extended for a longer period of time, the exposed legs must be protected by spraying them with a silicon lubricant. Do this every 2 -3 weeks, if the caravan is located in a salty environment.

Furthermore, during the winter period we have to deal with situations in which salt will tack to the outside of the system.

- In winter (slippery) conditions we advise you to take additional safety and precautionary measures. Especially because your safety during operation of the system. For

optimal performance under extreme conditions (-30 degrees) we recommend the use of a special hydraulic oil for low temperatures (consult an authorised dealer).

- Try to put the caravan in a location as clean and flat as possible.
- Place a piece of rubber (e.g. piece of carpet) between the frozen (slippery) surface and the footplate. Alternatively you can use the E&P footplate cover set (1400900).

Warranty

- Repairs to the caravan must be performed by dealers recognized by E&P Hydraulics.
- For systems which are not (or cannot be) changed, installed or repaired by a recognised E&P Hydraulics dealer, the warranty cannot be used.
- E&P Hydraulics gives guarantees for parts of its hydraulic Levels system against faults in material and manufacturing for a period of 36 months starting from the date of purchase.
- If an E&P Hydraulics product was checked by an official E&P Hydraulics dealer and a fault in material or manufacturing was discovered within the aforementioned period, E&P Hydraulics is able to choose the following actions:
- Repairing or replacing the faulty part for free in E&P Hydraulics factory or another location determined by E&P Hydraulics.
- Sending a mechanic to the location where the caravan is at that moment, in order to repair or replace the product/part on site.
- Writing out a credit note for the defective product/part.
- All warranty claims require a product test and approval by a dealer of E&P Hydraulics. All repairs must be approved by E&P Hydraulics before the work starts. There can be no exceptions to this procedure.

- Immediately contact E&P Hydraulics directly before trying to perform a repair or change to your E&P Hydraulics product. Claims for alleged damages to products are only allowed if E&P Hydraulics has had the opportunity to check the claim.

The warranty becomes invalid when:

- If the buyer modifies the system, or if the buyer makes settings independently. In case of abuse or negligence, overloading, damage through accident, incorrect loading or incorrect weight distribution, damage through improper use or improper maintenance, connection to wrong parts or repair attempts by other persons than the acknowledged E&P Hydraulics dealer/installer.
- This warranty does not apply to physical damage, damage as a result of force majeure, in case of commercial use or adaptation of the product or for products that are sold as a special offer and/or 'with defects'.
- If the product's identification criteria, which were attached in the factory, are changed or removed.

GETTING STARTED

You have arrived at your destination and now want to start to enjoy your new caravan. The following is a step by step guide to connecting your services and getting everything in your caravan working.

PLEASE NOTE – telephone numbers quoted in the following sections may incur charges.

ELECTRICITY

Power Supply Charger

Your caravan is fitted with a power supply/charger. This will charge the leisure battery “where supplied” when fitted and also power the 12V systems.

A leisure battery must be fitted to the caravan at all times when in use.

12v Systems:

When connected to the 230Vac site supply the automatic power supply/charger will charge the leisure battery and power the 12Vdc system*

Note: the power supply protection device must be in the on position.

When connecting to the tow vehicle ensure that the mains supply has been disconnected, the 12Vdc supply will automatically switch to use the tow vehicle's supply.

When connected to the tow vehicle and the engine is running 12Vdc power is disconnected to the habitational area except for selected items and appliances, these include the 12Vdc fridge supply and charging of the leisure battery.

GENERATOR/CHARGER

When connecting to a generator, always switch off the RCD (residual current device), start the generator and allow running for a few minutes to stabilise. When this has happened, switch the RCD to the ON position.

ELECTRICITY MAINS SUPPLY

Your caravan's main electrical installation is designed to run on 230V at 50 hertz AC supply.

CONNECTING TO MAINS SUPPLY ON ARRIVAL AT SITE

Before connecting the caravan installation to the mains supply, check that:

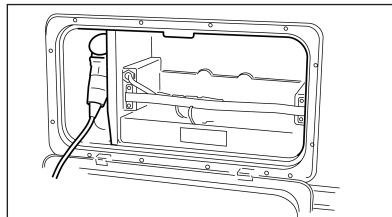
- (i) The mains supply is suitable for your installation and appliances, i.e. whether it is AC or DC and whether it is at the correct voltage and frequency.
- (ii) Your caravan is properly earthed. Never accept a supply from a socket outlet or plug having only two pins, or from a lighting outlet.
- (iii) Any residual current device (earth leakage circuit breaker) in the mains supply to the caravan has been tested. In case of doubt, consult the site owner or their agent.
- (iv) Make sure that the switch at the site supply point is off and that all electrical equipment in the caravan is switched off by ensuring your caravan mains isolating switch on the RCD is in the 'OFF' position.

ELECTRICAL WARNING

Attention: Always disconnect the electrical connector between the towing vehicle and the caravan before connecting a mains electric supply to the caravan and before charging the caravan battery by any other means.

Once the above checks have been made:

- (v) Open the battery box on your caravan and insert the female connector of the mains connection cable supplied with your caravan into the inlet within the battery box as shown below.



- (vi) Locate the site supply and remove any cover from the socket outlet provided at the supply point. Insert the male plug at

- (vii) Place any surplus cable under the caravan. Ensure that the surplus cable is not coiled up as it could overheat.
- (viii) Now switch on the mains isolating switch within the caravan, this can be found on the main consumer board.
- (ix) Check the RCD is working by pressing the test button. The 12V system must be switched off before carrying out this process. Once pressed all electrical lights and appliances should cease to operate. Reset, and then check the electrical system is operational.
- (x) Finally in order to get your 12V system operational, ensure the 12V switch is in the 'ON' position. Refer to index for further details on the control panel fitted.

- (i) Switch 'OFF' the RCD in the caravans distribution unit.
- (ii) Remove the male 3 pin plug from the site supply.
- (iii) Disconnect the female 3 pin plug from the caravan and

6-2

GAS SAFETY ADVICE

The gas system within your vehicle has been installed by an STGW approved installer and tested in line with BS EN 1949:2011+A1:2013.

In the event of a suspected gas leak the gas must be turned off using the isolation valve on the gas bottle. A competent gas fitter should then check the system before it is used/reused.

Regularly check flexible gas hose, joints and connections for tightness. Finally, make sure that each gas appliance is working efficiently to the recommendations of the appliance manufacturers.

See Index - Ventilation

FACTS ABOUT LPG

- LPG is not poisonous.
- Bi-products of incomplete combustion are harmful to health.
- LPG is dangerous if all air and oxygen is excluded.
- LPG has been given a smell by the manufacturers in order to identify leaks.
- The gas is heavier than air and therefore sinks to the lowest point.

AWNING SPACES, LPG AND APPLIANCE EXHAUST

Using a refrigerator on gas which vents into an enclosed awning space must only be done if there is sufficient ventilation to prevent the build up of CO₂.

Space & Water heaters may produce sufficient amounts of CO₂ to pollute the awning space. If an awning enclosure is attached these appliances must not be used on gas.

Please note: Ventilation holes must be clear at all times.

LPG GAS SYSTEM

Erwin Hymer Group UK do not recommend the use of any external cylinders. All cylinders in use should be within the gas locker provided.

Please ensure that you have read the operating instructions for each gas appliance contained in your Owners Information Pack. Please ensure that any gas hose left unconnected is protected from dirt or other foreign bodies entering the hose.

WARNINGS

- **Fresh air circulation should be allowed below the caravan when appliances are in use and when flues terminate below the floor to allow free evacuation of the products of combustion. At least three sides of the underfloor space should always be kept open and unobstructed especially by snow. Do not make any additional openings in the floor.**
- **No appliance shall be used outside when connected to an internal outlet.**
- **Maintain adequate spacing of combustible materials from sources of heat or naked flame.**
- **Do not use additional independent gas appliances inside the caravan.**

GAS SUPPLY






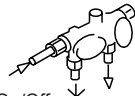
Your caravan is designed to operate using either propane or butane liquefied petroleum gas at 30M/bar. Gas can be obtained from your caravan dealer. Your caravan is designed to accept a maximum 2 x 6-7kg gas bottles.

Connection

Make sure that heating and cooking appliances and gas cylinders are switched off.

Each gas appliance is connected to its own gas isolation tap. These are identified on the tap via a label. Below is a key to identify each label.

To operate the tap the arrow on the tap shows the direction of flow for the gas.

	
Water Heater	Cooking Appliance
	
Space Heater	Hob
	
Refrigerator	Gas On/Off

Changing a Gas Cylinder

Before commencing to change a gas cylinder ensure that the valve on the cylinder is turned fully off. Turn off all gas operated appliances.

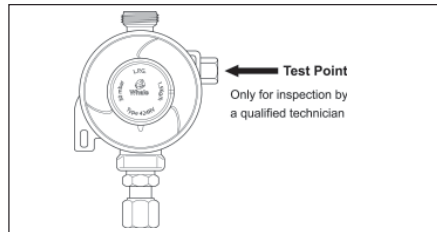
Remove the gas hose from gas cylinder.

Before refitting a gas cylinder, ensure that all gas operated appliances are turned off - particularly after winterisation. Ensure all connections are secure.

When the cylinder is connected please ensure that the high pressure hose is not placed under any strain.

WARNING: If cylinders other than those recommended are used, ensure that the cylinders are adequately supported, do not block ventilation openings and care to be taken not to cause damage to fixtures and fittings located in the compartment.

Gas Regulator

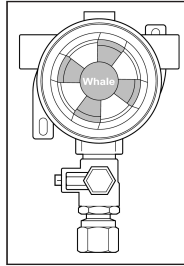


Your new caravan has been fitted with a fully approved gas regulator designed to operate at a gas pressure of 30mBar. Your regulator is fitted with a test point, which is accessed via the inlet at the side of the regulator. This access point is only for carrying out gas pressure tests and **must not** be used for any other purpose.

Please note: Only Gas Safe RegisterTM approved gas fitters can carry out any work on your caravan gas installation.

Auto Changeover Gas Regulator (where fitted)

The Whale Auto Changeover Gas Regulator, Type 924N has been specially designed to supply a caravan or motorhome gas installation in compliance with the requirements of annex D of standard EN 12864. Supply pressure for appliances is standardised at 30 mbar for the whole of Europe.



Note: Not suitable for use in caravans or motorhomes when the vehicle is in transit.

WARNING: This product is designed for use with all liquefied petroleum gases: propane, butane and LPG.

LPG is highly flammable.

Important: In the following cases, shut off the cock on the cylinder **IMMEDIATELY** and contact your dealer or Whale Support +44 (0)845 217 2933:

- Abnormal combustion at the burner(s) of a gas appliance (flames too high or too low)
- Smell of gas
- Outbreak of fire

A planned maintenance schedule of regular inspection is recommended, replacing components as necessary.

We recommend the gas regulator unit be replaced 10 years from the date of manufacture.

Instructions for use

The two inlets of the regulator are to be connected by means of two high pressure hoses complying with the specifications of Standard EN1949.

Putting into <<service>> Figure 1.

- After having checked that the indicator remains green in the two positions of the knob, turn the knob so that the arrow is facing to the right or the left. The arrow on the knob will indicate the cylinder in <<service>> use.

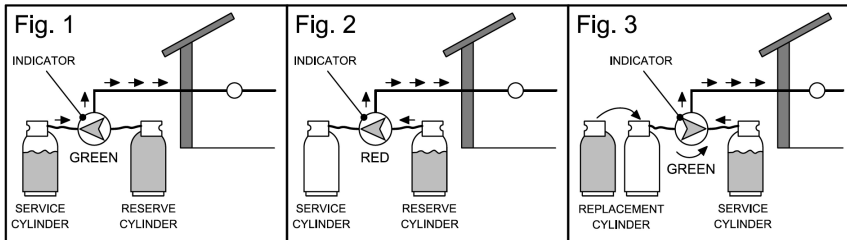
Operation of the <<reserve>> Figure 2.

- The indicator is red which means that the cylinder in <<service>> has run out. It is now empty and the installation is operating on the <<reserve>> cylinder.

Replacing the empty cylinder, Figure 3.

- Turn the knob halfway. The cylinder that was previously in <<reserve>> will become the cylinder in <<service>> the indicator will turn green as usual. If it stays red, this means the system has been operating on the <<reserve>> cylinder for too long and that this one is also empty. It will therefore be necessary to change both cylinders.

CAUTION: It is strongly recommended that only Gas Safe Register™ or STGW approved gas fitters carry out any work on your caravan gas installation.



High Pressure Gas Hoses

You should only connect to this regulator using a length of approved high-pressure hose not exceeding 450mm from the gas cylinder to the regulator. These approved high-pressure hoses are available from your Erwin Hymer Group UK Retailer. These hoses are connected using screw thread fittings, which will make a seal if connected and tightened using a spanner. Once the hose is securely connected turn on the gas tap above the regulator, then turn on the gas bottle to allow gas to flow into the caravan.

In order to make all your caravan gas appliances operational it is necessary to open each appliance gas tap as detailed in previous column. All your gas appliances should now be operational. Instructions on how to use each appliance are detailed later in your handbook.

WARNING: Aerosols and highly flammable liquids must not be stored in the compartment behind, or adjacent to, any gas appliance. Some industrial LPG appliances operate at high pressure and require a 'high pressure' regulator. This often has an adjusting handle on it. NEVER use such a regulator on a caravan. Ventilation holes must be clear at all times.

Whale High Flow Pump with Intelligent Control®

Your caravan has been fitted with the Whale High Flow Pump with Intelligent Control®

Water System

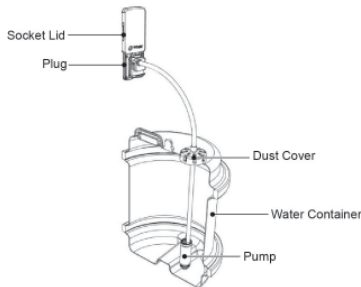
Before using your water system for the first time, you must prime the water system and calibrate the Watermaster Pump Controller. Your water system has been fitted with the technology to ensure you never have to adjust your pressure switch again! Whale High Flow Pump with Intelligent Control® also protects the life of your pump by automatically turning it off if the water container is empty.

To prime your Water System

Step One

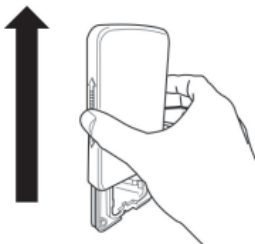
Place pump into a full water container.

Ensure that the pump reaches the bottom of the water container as shown.



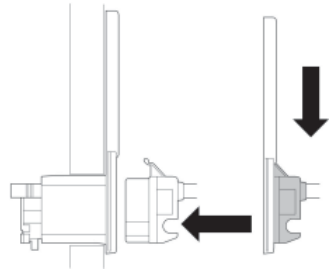
Step Two

Open socket lid, by using the side grips as shown.



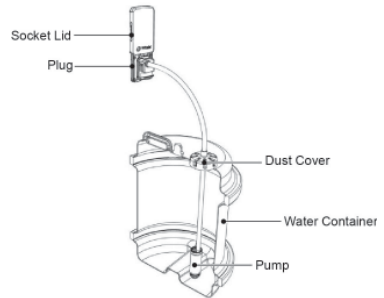
Step Three

Insert plug and secure by using the socket lid to lock in place.



Step Four

Adjust the dust cover so that it covers the opening in the water container. This prevents debris entering. **Please Note:** The dust cover **must not** be secured to the opening as air **must** be able to enter the container.



Step Five

Switch on the Master Switch. This allows 12V d.c. to reach the pump and it should start to run.

Step Six

Open one cold tap. Trapped air will be expelled from the system and water will flow from the tap. Open all taps on cold then hot to expel all air in the system.

Step Seven

Turn the tap off when water flows evenly. The pump should turn off after approximately 10 seconds.

To calibrate the Water System

Now that the water system has been primed, you must calibrate the Intelligent Control[®] unit, which is located at the back of the water socket (inside the caravan).

5 easy steps to calibrate your Watermaster[®] IC Pump Controller

To ensure successful installation and optimum performance of the Watermaster[®] IC Unit, please follow these 5 simple steps. You must calibrate the system.

Step 1

Press and hold the calibration button until the green LED starts to flash after 1-3 seconds



Step 2

Open the cold shower and the pump should start (there may be a short delay)



Step 3

After approximately 30 seconds, turn off the shower



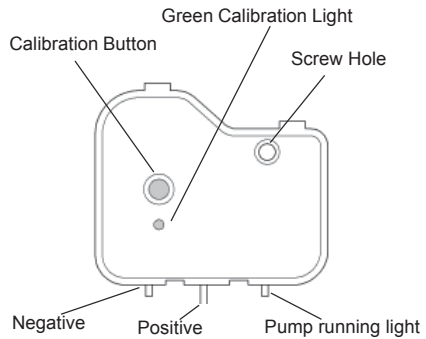
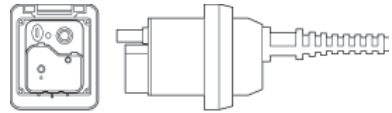
Step 4

After approximately 10 seconds (the pump should still be running), press and hold the calibration button again until the LED turns solid green and the pump will stop after approximately 10 seconds

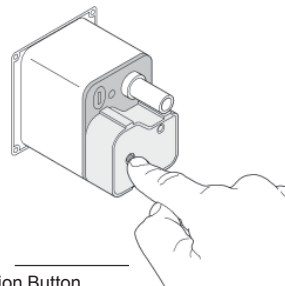


Step 5

The green LED should turn off and blink briefly every 5 seconds. The system is now calibrated



Watermaster[®] IC



Calibration Button

Calibration Button

Watermaster[®] IC is now installed and ready for use

During normal use, once calibrated you will only need to recalibrate if you use a different pump. Simply repeat the steps above to calibrate a new pump.

Water System - Diagnostics

To aid with trouble shooting the green LED on the Intelligent Control® unit will flash to indicate different fault types.

LED	Code
On	Tap open and pump running
Fast Flash (flash every 1 second or less)	In Calibration Mode
5 Second Flash (flash every 5 seconds)	Calibrated and ready for use Normal operation
10 Second Flash (flash every 10 seconds)	Un-calibrated. Follow calibration instructions
15 Second Flash (flash every 15 seconds)	Water container is empty. Turn Master Switch 'off' then 'on' again
20 Second Flash (flash every 20 seconds)	Battery voltage is low. Turn Master Switch 'off' then 'on' again and charge battery

Water System - Troubleshooting

Problem	Solution
Pump will not run	Check at least one tap is open
	Turn the pump isolator switch 'off' then 'on' again
	Check the battery is fully charged
	Check the pump isolator switch is 'on'
	Check the master switch is 'on'
	Clean the electric contact strips on either side of the plug and ensure they are making contact with the socket
	Check wiring connections
	Check fuse (see fuse box)
Pump cycles on and off with all taps and showers are closed	Check for air or water leaks in taps and piping
	Check the non-return valve (fitted in the socket) is free from grit and dirt. Use a ballpoint pen to dislodge any grit in the non-return valve
	Recalibrate the system - follow calibration instructions
Pump runs for 30 seconds or more without stopping when all taps and showers are closed	Check all connections in the pipework are secure
	Recalibrate the system - follow calibration instructions.

Storing Your Water Pump

The socket lid **must be** closed while not in use.

The pump **must be** removed from the socket before moving the caravan.

The pump **must be** stored in a cool, dry place when not in use.

When refilling your water container, the pump can be placed as shown to keep it clean.



For efficient running and maximum pump life:

- Ensure there is sufficient water in the container.
- Ensure continuous operation does not exceed 15 minutes.
- Ensure all pipework connections are secure and watertight.
- Ensure the power supply is adequate.
- Keep o-rings well lubricated to aid connection and removal of the plug. Use a water-based lubricant such as silicone grease. Vaseline **must not** be used.
- Clean electric contact strips often.
- Shake pump to expel air before dropping it into the water container and connecting the plug.

Water System - Maintenance

Whale Watermaster Pump with Intelligent Control® is designed to be maintenance free and does not contain any serviceable parts. Please note: The Intelligent Control unit is enclosed to protect the electronics and must not be opened. Opening the unit will result in damage and may invalidate your warranty.

Whale recommends a regular schedule of inspection, at least twice a season.

Water System - Replacement Parts

Part Number	Description
GP1652	Whale High Flow Pump Only
EP1612	Whale High Flow Pump and Plug
EP1612	Whale Watermaster IC® Kit - includes High Flow Pump and Plug and IC Unit

Water System - Winterising

Your water system must be drained fully when not in use. For details of how to drain your water system in preparation for winter storage please see The Whale Guide titled Getting Ready for the Winter.

Water System - Support

For installation advice or help with your water system please contact Whale Support.

Tel: +44 (0)28 9127 0531

E-mail: info@whalepumps.com

ELECTRICAL SYSTEM

12v POWER SUPPLY

Battery Installation

Your caravan will be fitted with a BCA Leisure charging and power distribution unit.

If you wish to install a leisure battery please ensure that it is placed on the battery tray supplied with your caravan. Then place the tray in the battery locker fitted to the side of your caravan. Connect the battery to the clamp fittings connected to the connection leads within the battery box.

The type of leisure battery you should utilise will depend on how you wish to use your new caravan. We recommend that you refer to the NCC approved battery scheme, which can be found at www.thencc.org.uk.

Battery Maintenance

Storage

Ensure that the leisure battery is fully charged before placing the vehicle into storage.

Once in storage disconnect the battery. Check the battery state every 2 months, if the terminal voltage drops below 12.07V then re-charging is necessary.

Charging should be carried out in a cool, dry, well ventilated area.

Do not place the battery onto cold surfaces such as concrete as this will affect the battery's ability to charge.

This will depend on your leisure battery's capacity, age and state of charge.

Points to remember

- Prolonged discharge causes harmful sulfation and may damage a battery.
- For peak performance never let a battery sit discharged for long periods of time.
- Over discharged batteries are permanently damaged and need to be replaced.

Note: Do not over discharge the battery. One of the most common causes of battery failure is when the battery is discharged below the recommended level of approximately 12.2v -

ref table. Discharging a battery below this figure will cause permanent damage. Overheating and gassing will occur when re-connected to the mains supply.

	12 Volt Battery	State of Charge
Good	12.7V	100%
	12.5V	90%
OK	12.42V	80%
	12.32V	70%
	12.20V	60%
	12.06V	50%
Warning	11.9V	40%
	11.75V	30%
	11.58V	20%
Damaged	11.31V	10%
	10.5V	0%

Good: the battery is in good condition and not in need of charging

OK: nothing to worry about but put the battery on charge as soon as you can

Warning: get the battery on charge as soon as you can. Leave it and the battery will be damaged, possibly beyond repair

Damaged: Replace battery

Generators / Charger

All electrical equipment fitted in your new caravan can be run from either a controlled generator or charger whose output is maintained between 11volts and 14volts.

At least once every 3 years, the caravan electrical installation should be inspected and tested, and a report on its condition obtained, as prescribed in British Standard BS7671.

230v POWER SUPPLY

Mains Unit

The Mains Unit replaces the conventional fuse box. Similar, but larger ones are often fitted in new houses. The unit, normally located in the front bed box, gives overloads and earth leakage protection for the 230V electrical supply in your caravan.

For normal operation all switches on the unit need to be in the ON position. The switches on the left of the unit are known as MCB's (miniature circuit breakers). These take the place of the conventional fuse but are more convenient. In the event of a fault the MCB 'trips' i.e. automatically moves to the OFF position. After elimination of the fault the MCB can be re-set by switching to the ON position (against the spring pressure in an upwards direction). If an earth fault develops, or a person was to touch a live piece of equipment, the leakage of current to earth should immediately operate the RCD (residual current device) and 'trip' the main switch, to the OFF position. This switch can only be re-set after elimination of **the fault**.

Please note: In case of difficulty, consult an approved electrical installation contractor (who may be the local electricity board). It is dangerous to attempt modifications and additions yourself. Lamp holder-plugs (bayonet- cap adaptors) should not be used under any circumstances.

Resetting the RCD

To re-set, operate the switch as for MCB's. Periodically, the RCD should be checked by operating the test button marked 'T'. The unit should immediately switch to the OFF position. If the unit does not switch off then a qualified electrician should be consulted. If the unit does switch off, the test is complete and the switch can be re-set restoring the supply back to normal.

Please note: Simultaneous operation of all of the 230V mains electrical equipment may not be possible. A typical UK caravan site mains hook-up point provides a maximum output of 16 amps and on some continental sites the available output may be as low as 5 amps. If your loading exceeds the site supply

it may trip the site circuit breaker. Please check the available mains output with your site operator. The following items need to be added together if used simultaneously.

230V mains equipment typical consumption figures:

- Refrigerator (Under counter)0.50 amps
- Refrigerator (Full height)..... 1.0 amps
- Charger2.2 amps
- Water heaters6.5 amps
- Blown air heaters..... 11.5 amps
- Colour TV3.33 amps
- Microwave4.00 amps

AUTOMATIC CHARGING SYSTEM

The battery charger will operate automatically when the caravan is connected to the mains outlet on a caravan site. The 12V system, with the exception of the 12V refrigerator and battery charging, will not operate when the caravan is connected to the towing vehicle.

CHECK all caravan equipment is set-up to accept the site supply before actually switching on.

INTERNAL LIGHTS

Your new caravan is fitted with all LED lighting.

MAXIMUM POWER RATINGS FOR INTERNAL LIGHTS (WHERE FITTED)

Type of Light	Maximum Power Rating
Front window light.....	4 watts
Downlighters.....	1.2 watts
Reading lights.....	1.2 watts
Floor LED	0.36 watts
Above locker strip lights 500mm	1.2 watts
Above locker strip lights 800mm	2.2 watts
Awning lights	5 watts
LED tape is used as backlit mood lighting.	
The wattage varies from 4.8 to 9.6W depending on the location within the vehicle.	

Please note: All LED units must be replaced with like for like or manufacturers recommended replacement.

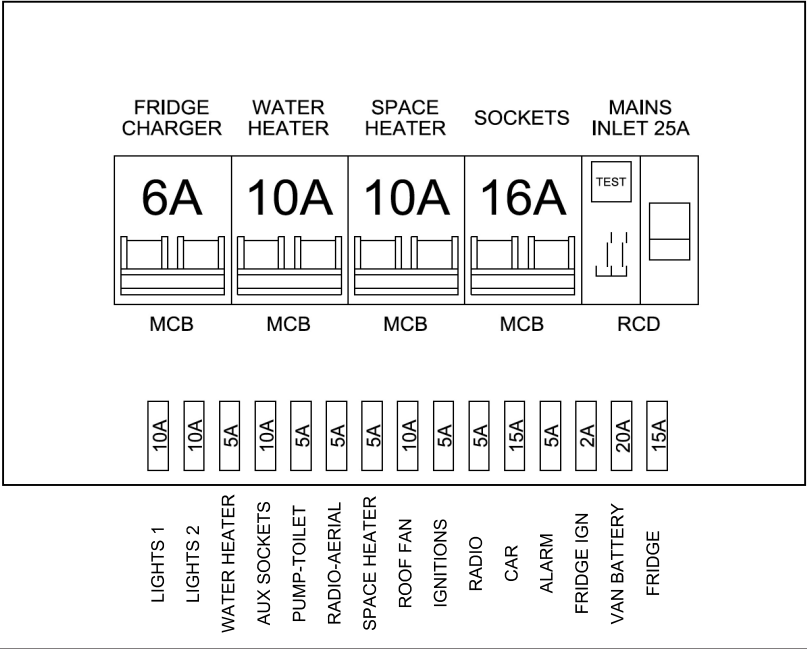
Never replace an LED with one which has a higher rating.

CAUTION: Do not look directly at LED lights.

External Solar Panel Connection (Where fitted)

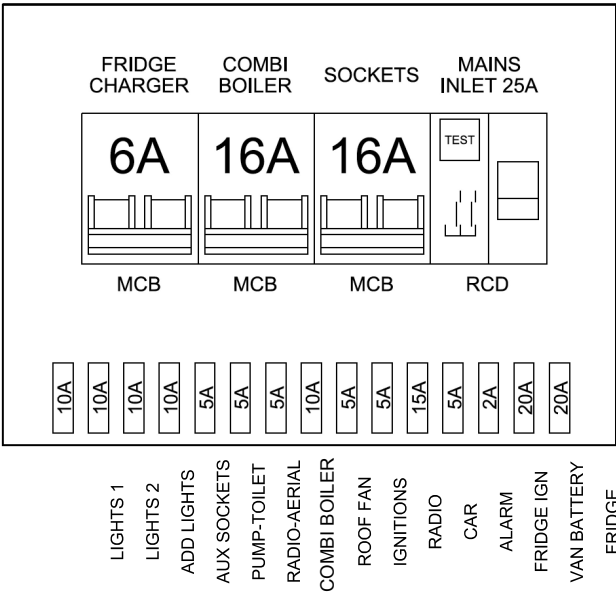
To connect a solar panel insert the panel connection lead into the connection point within the battery box, please ensure that you have a regulator in line whenever a solar panel is connected.

MAINS UNIT - XPLORE

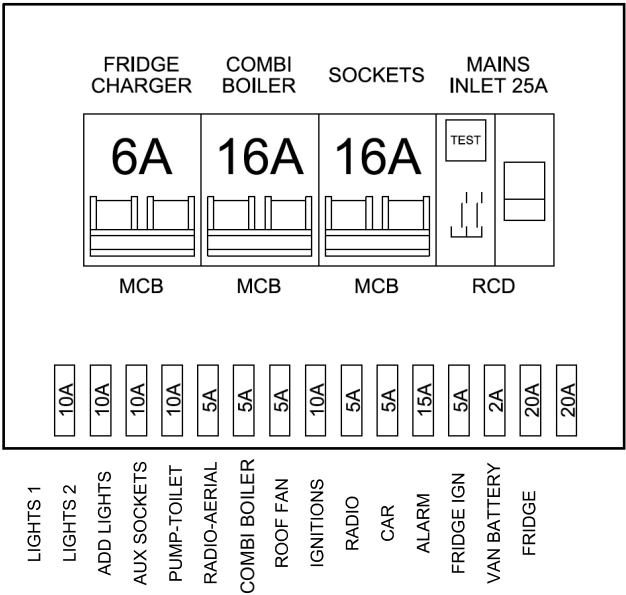




MAINS UNIT - CRUSADER



MAINS UNIT - BUCCANEER



HOW TO USE YOUR CARAVAN'S EQUIPMENT

Within this section of your caravan's handbook we will give you brief details on how to operate all of the caravan's equipment from the gas cooking equipment to the window blinds. For further details on the major equipment within your caravan please read the individual appliance instructions contained with your user information pack.

Please note: Before attempting to use any gas equipment please ensure that the gas bottle is connected securely to the caravan's regulator via a high pressure gas hose and the bottle valve is in the 'on' position. Also ensure the appliance isolation valves are in the 'on' position as shown in the gas system section.

Please note: Before attempting to use any 230V electrical appliance ensure that you have connected the mains connection cable to a mains hook up and that the mains isolation switch is in the 'on' position.

ELECTRICAL CONTROL PANELS

Your new caravan will be fitted with one of the following control panels shown overleaf.

CONTROL PANEL (XPLORE)

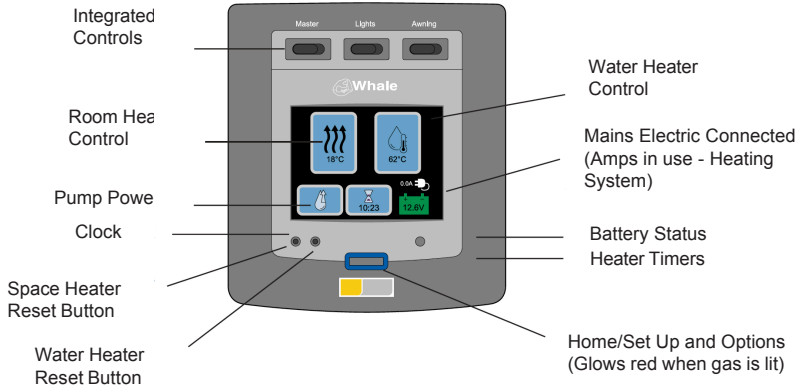


Please note: Please note the light switch on the control panel only controls the high level lighting in the front lounge area.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

CONTROL PANEL (WHIRLWIND, AVANTE APEX)

iVan Control Panel

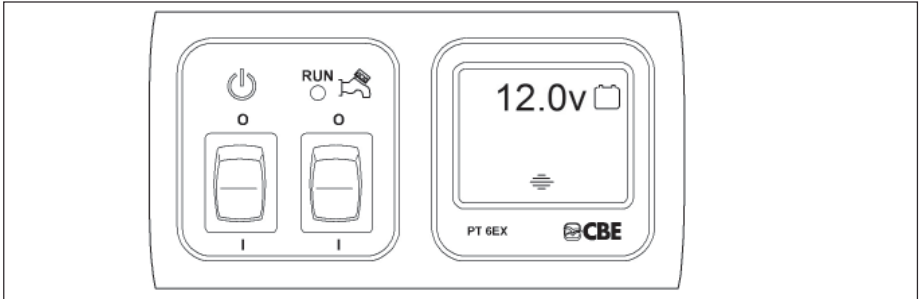


Whale iVan Control Panel Overview

Please refer to heating section for full operating instructions.

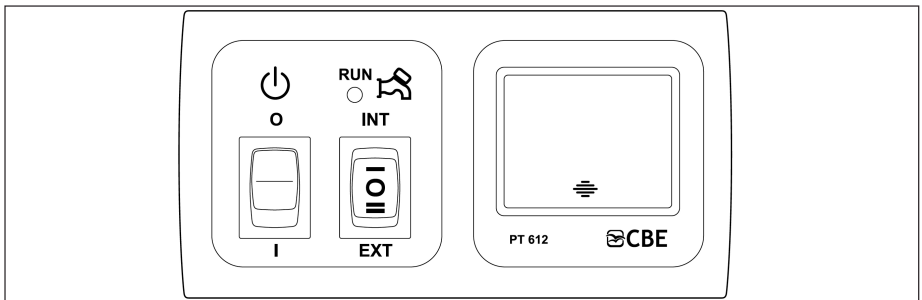
HOW TO USE YOUR CARAVAN'S EQUIPMENT

CONTROL PANEL(CRUSADER – HURRICANE, SOLANO & SHAMAL)



- (i) To operate the 12V systems for your caravan depress the left rocker switch.
- (ii) To operate the pump for your water system depress switch marked with a tap symbol.
- (iii) When the pump is running the neon light will illuminate.
- (iv) When the left hand button is depressed the available battery Voltage will be displayed.

CONTROL PANEL (CRUSADER AND BUCCANEER)



- (i) To operate the 12V systems for your caravan depress the master switch adjacent to the pump control switches.
- (ii) To operate the pump for your water system depress the left hand rocker switch for operation from an external water source. (Aqua roll or Water line).
Note: the right hand switch must be in the centre position.
- (iii) To fill on the onboard water tank the left hand rocker switch must remain in the on position then depress the right hand rocker switch to the EXT position. Once the tank is full the pump will automatically switch off.
- (iv) To use water from the on board water tank the left hand switch must remain in the on position then depress the right hand switch to the INT position.

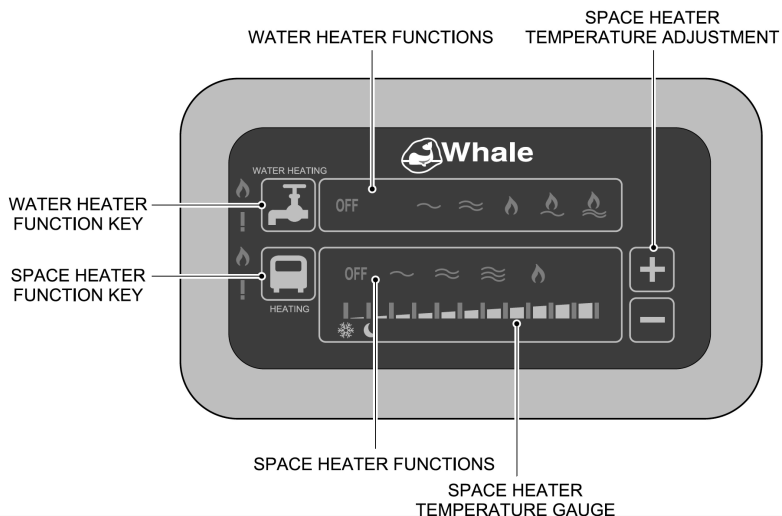
Digital readout














- (v) Displays both battery voltage and onboard tank level (**Note:** The water level reading should be used as a guide only. There is a degree of tolerance in the reading depending on water type and temperature). To illuminate the back light, lightly touch the "touch button" once, the backlight will remain on for 15 seconds.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

WHALE HEATING SYSTEM(XPLORE)

The Whale Space Heater and Whale Water Heater are both operated by using the Whale Duo Control Panel. To operate the Space Heater or Water Heater on gas only, a 12 V d.c. supply must be connected at all times. To operate the Space Heater or Water Heater on electric, they must also be connected to a suitable 230V a.c. supply.



Space Heater		Water Heater	
Symbol	Function	Symbol	Function
	Off		Off
	500W (Low)		750W (Med)
	1000 (Med)		1500W (High)
	2000W (High)		Gas On
	Gas On		750W + Gas
	Frost Protection		1500W + Gas
	Night Time Setting		

Whale Space Heater – User Operation

For Gas Operation:

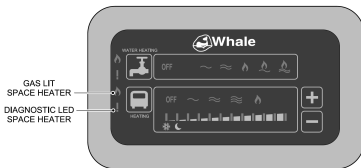
Press the Space Heater Function



Key until the Gas icon is illuminated



There will be a pre-purge pause of approx. 20 seconds to allow any unburnt gas to leave the flue. The Gas Lit LED will light green upon successful flame ignition.



Please note: If there is air in the gas supply line it may take a few attempts for the gas to ignite. If the ignition is unsatisfactory the Space Heater Diagnostic LED will light red. If the Diagnostic LED is lit, please refer to the Troubleshooting section.

For Electric Operation:

The Space Heater is equipped with 3 electric power settings; 500W, 1000W and 2000W.

To select 500W:-

Press the Space Heater Function



Key until the 500W icon is illuminated



To select 1000W:-

Press the Space Heater Function



Key until the 1000W icon is illuminated



To select 2000W:-

Press the Space Heater Function Key



until the 2000W icon is illuminated



To turn the Space Heater Off:

Press the Space Heater Function





Key until 'Off' is illuminated



To adjust the temperature:

Use the temperature control buttons to adjust the temperature.

Press  to increase the temperature.

Press  to decrease the temperature



The temperature setting will be shown on the temperature gauge.



Please note: The Space Heater will automatically turn itself on and off to maintain the desired ambient temperature.

For Frost Protection:

Frost protection maintains a low temperature in the vehicle during cold temperatures.

Press  until the frost protection icon  is illuminated on the temperature gauge.

Please note: The vehicle must be connected to a suitable 230V a.c. supply in order to operate.

Whale Water Heater - UserOperation

For Gas Operation:

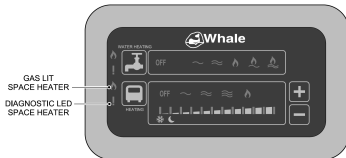
Press the Water Heater Function Key



until the Gas icon is illuminated



There will be a pre-purge pause of approximately 5 seconds to allow any unburnt gas to leave the flue. The Gas Lit LED will light green upon successful flame ignition.



Please note: If there is air in the gas supply line, it may take a few attempts for the gas to ignite. If the ignition is unsatisfactory, the Water Heater Diagnostic LED will light red. If the Diagnostic LED is lit, please refer to the Troubleshooting section.

For Electric Operation:

The Water Heater is equipped with 2 electric power settings: 750W and 1500W.

To select 750W:-

Press the Water Heater Function Key



until the 750W icon is illuminated



To select 1500W:-

Press the Water Heater Function Key



until the 1500W icon is illuminated



For Gas & Electric Operation:

For faster water heat up, the Water Heater can be operated on both gas and electric.

To select 750W and Gas:-

Press the Water Heater Function Key



until the 750W and gas icon is illuminated



To select 1500W and Gas:-

Press the Water Heater Function Key



until the 1500W and gas icon is illuminated



To turn the Water Heater Off:

Press the Water Heater Function Key until 'Off' is illuminated



Whale Heating System - Troubleshooting

The Whale Space Heater and Whale Water Heater are equipped with an electronic diagnostic system which will detect fault conditions ranging from poor gas or d.c. supply to internal heater malfunctions. In the unlikely event of a failure, the Diagnostic LED will light red.

Whale Space Heater - Fault Finding

If the Space Heater diagnostic LED is lit as shown:-



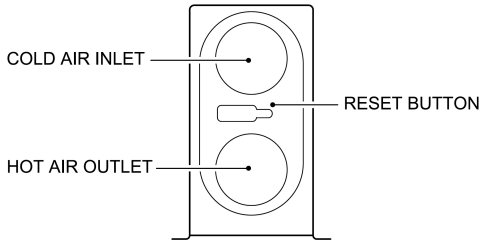
Press  and  together to identify the problem.

The number of bars that light on the Temperature Gauge indicate the fault code, e.g. 1 bar lit equals fault code 1, 2 bars lit equals fault code 2 etc.

Check gas supply making sure that there is gas in the bottle and no blockage in the gas line. Ensure that propane is used at temperatures below +5°C. Clear lockout as described.

Number of Bars Lit	Fault	Remedy
1	No flame detected	Check gas supply making sure that there is gas in the bottle and no blockage in the gas line. Ensure that propane is used at temperatures below +5°C. Clear lockout as described.
2	Overheat	Check the air ducts and vents are not blocked or restricted. Whale recommends that you wait at least 5 to 10 minutes to allow the Space Heater to cool before clearing lockout as described.
3	Low/high voltage supply	Minimum operating voltage is 10V, maximum is 15V, when measured at the Space Heater. Check battery voltage. If between 10V and 15V, check connections between Space Heater and battery. Check alternator or external battery charging. Clear lockout as described.
4	Combustion air fault	Check combustion air inlet flue and exhaust flue for blockages. Clear lockout as described.
5	Other/Internal fault	Attempt to clear lockout as described. If this fails, contact Whale Support on +44 (0)845 217 2933 .
Solid	General fault	Two faults have occurred at the same time OR at least five or more lockout clearing attempts have been unsuccessful. Clear lockout by pressing the red Reset Button on the Space Heater, as described.

Whale Space Heater - Reset Button Location (XC Lite and XC Duo models only)



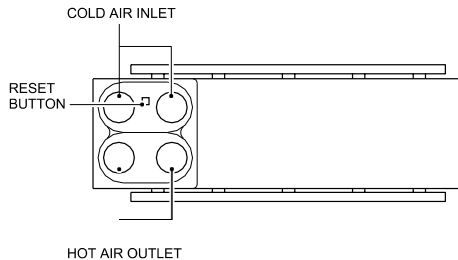
Whale Space Heater - Lockout Clearing Procedure

If the Space Heater lockout condition has been identified by **1, 3, 4 or 5** flashes, the lockout must be cleared by turning the d.c. power 'off' and then 'on' again at the master switch in the vehicle. If the first attempt is unsuccessful, you can retry an additional 4 times. If the lockout still will not clear (Identified by a solid LED), please press the Reset Button on the Space Heater.

If the Space Heater lockout condition has been identified by a 2 flashes, a solid red LED and / or five or more unsuccessful attempts to clear a lockout have been made, the lockout must be cleared by pressing the Reset Button on the Space Heater once.

If the problem persists, contact **Whale Support** on **+44 (0)845 217 2933**.

Whale Space Heater - Reset Button Location (all other models)





HOW TO USE YOUR CARAVAN'S EQUIPMENT

Whale Water Heater - Fault Finding

If the Water Heater diagnostic LED is lit as shown:-

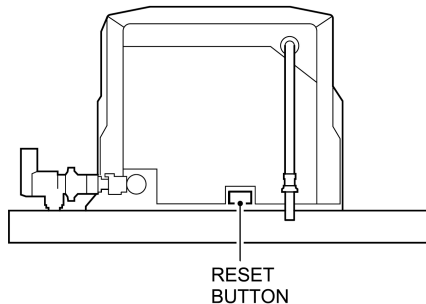


Press  and  together to identify the problem.

The number of bars that light on the Temperature Gauge indicate the fault code, e.g. 1 bar lit equals fault code 1, 2 bars lit equals fault code 2 etc.

Number of Bars Lit	Fault	Remedy
1	No flame detected	Check gas supply making sure that there is gas in the bottle and no blockage in the gas line. Ensure that propane is used at temperatures below +5°C. Clear lockout as described below.
2	Overheat	Check the air ducts and vents are not blocked or restricted. Whale recommends that you wait at least 5 to 10 minutes to allow the Water Heater to cool before clearing lockout as described below.
3	Low/high voltage supply	Minimum operating voltage is 10V, maximum is 15V, when measured at the Water Heater. Check battery voltage. If between 10V and 15V, check connections between Water Heater and battery. Check alternator or external battery charging. Clear lockout as described.
5	Other/ Internal fault	Attempt to clear lockout as described below. If this fails, contact Whale Support on +44 (0)845 217 2933 .
Solid	General fault	Two faults have occurred at the same time OR at least five or more lockout clearing attempts have been unsuccessful. Clear lockout by pressing the red Reset Button on the Water Heater, as described below.

Whale Water Heater - Reset Button Location



Whale Heating System - Maintenance

The outside surfaces of the Space or Water Heater do not normally require cleaning.

If the surface needs cleaned, you must isolate the electric supplies and wipe down with a soft, damp cloth only. You must not use abrasive cleaning agents. Allow to fully dry before reconnecting electrical supplies.

Whale Heating System - Servicing

Whale recommends that the Space and Water Heater must be inspected, at least annually. This must be in accordance with the practice in the country where it is used and in accordance with the Whale instructions (provided separately). Both the Space Heater and Water Heater contain ESD sensitive components and therefore must only be opened by a Whale Approved Service Centre or Engineer.

Annual testing of the gas soundness and combustion must be carried out by an accredited LPG Engineer.

Whale Heating System - Winterising

When using the Space or the Water Heater in winter, you must ensure that the flues are not blocked by fallen leaves or snow etc. When the Space Heater is not in use for long periods of time, e.g. in winter storage, you must cover the open end of the combustion air and exhaust flues to prevent ingress of leaves etc.

Whale Space and Water Heating

System To the User:

Read the following instructions carefully.

Observe all warnings.

In the unlikely event of leaks in the gas system, or if there is a smell of gas:

- Extinguish all naked flames
- Do not operate any electrical switches
- Turn off all gas appliances
- Open windows and doors for ventilation
- Do not smoke
- Shut off gas connection

Ensure that the system is thoroughly checked by a Whale Approved Service Centre or Whale Service Engineer.

The Space Heater or Water Heater must not be operated in the following situations:

- When refuelling the vehicle, refuelling the vehicle towing the caravan or refuelling any other appliances.
- When the vehicle in which the Space Heater is installed is in motion, unless the Vehicle in Motion Flue Kit is installed.
- When the vehicle in which the Space Heater is installed is in a confined space, (such as a garage).

This appliance is **not** intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children **must be** supervised to ensure that they do not play with the appliance.

The Space and Water Heater's gas supply and flues for the products of combustion must be inspected in accordance with national regulations or if these do not exist, the Space or Water Heater manufacturer's recommendations. Whale advises that this must be carried out at least annually, by a Whale Approved Service Centre / Technician, or competent person, at least annually. This **must be** completed according to the practice in the country where it is used and according to the Whale instructions.

Whale recommends annual testing of gas soundness and combustion by an accredited LPG engineer. The Space and Water Heater contain ESD sensitive components and therefore **must only** be opened by a Whale Approved Service Centre / Technician (contact Whale Support).

Any alteration to the appliances, including the components used for the products of combustion, use of non-Whale spare parts/accessories and non-observation of the installation and operation instructions will lead to cancellation of the warranty and exclusion of liability claims and results in it becoming illegal to use the appliance.

When using non Whale operating switches provided by the installer or vehicle manufacturer, they are responsible for providing user instructions and identification of symbols on the control panel.

Whale Space Heater

When operating the Space Heater, a minimum of one hot air outlet vents **must be** permanently open.

When using gas to operate the Space Heater, the combustion air flue and outlet openings for the products of combustion (exhaust flue) **must never** be obstructed. They must be checked regularly and if necessary cleaned by the user (e.g. snow or fallen leaves **must be** removed from the combustion outlet and air intake).

Where the open end of the exhaust flue terminates, three sides of the underfloor space must be kept open and not obstructed, and must not contain through-floor ventilation openings.

The inlet vents of the Space Heater **must never** be blocked and at least one hot air outlet vent **must be** permanently open.

Whale Water Heater

Before operating the Water Heater, the user must ensure that the caravan water system, including Water Heater is full of water, and that the vehicle is level.

This appliance must be fully drained if there is a risk of frost. Frost damage will not be covered by warranty.

The water temperature cannot be adjusted. It is automatically set to approximately 7°C and controlled by the PCB to prevent bacteria growth. To avoid scalding, the temperature of the hot water supplied to the taps and showers **must be** controlled.

Do not use the water as drinking water.

WHALE HEATING SYSTEM(WHIRLWIND, AVANTE APEX)

A Safe Operating Environment

For safe use carefully read, understand and keep these Operating Instructions. Observe applicable laws, directives and standards.

Not following the information in these Operating Instructions can result in serious material damage and serious risk to health or life of persons. Only operate this appliance and its control panel if they are all in perfect condition. If damaged, contact Whale Support immediately.

It is the sole responsibility of the vehicle owner to ensure that the appliance is in a safe operating condition and is operated correctly.

- The unit may be operated only with approved Whale control panels and accessories.
- If the flues have been placed near or directly beneath an opening window, the device **must be** equipped with an automatic shut-off device in order to prevent operation with the window open (BS EN 1949).
- During cleaning, do not project water jets directly onto heater casing or flue openings.
- Do not drive the vehicle through a ford or deep water which may submerge the heater.
- The exhaust flue and combustion inlet **must be** kept clear at all times and if necessary cleaned, e.g. in winter it may be necessary to clear snow (BS EN 624).
- Heater **must not be** operated when refuelling the vehicle, the towing vehicle or other appliances, or when the vehicle in which the heater is installed is in a confined space such as a garage (BS EN 624). Make sure that the heater definitely cannot be switched on via any other means of controlling the heater.

Safe Operation of the Heater

- Keep all air inlets and outlets clear at all times (BS EN 624).
- The surfaces of the heater and exhaust flue in addition to the exhaust gases may become hot.
- Any heat sensitive materials **must not be** stored in the same compartment as the heater or warm air ducting and outlets.
- Do not touch the area around the exhaust duct and do not lean any objects against the exhaust duct or flue terminal.
- The gas supplied to the heater **must be** in the gaseous state. (BS EN 1949).

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision. Children of less than 3 years should be kept away unless continuously supervised (BS EN 60335-1).

Children aged from 3 years and less than 8 years shall only switch on/off the appliance provided that it has been placed or installed in its intended normal operating position and they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children aged from 3 years and less than 8 years shall not plug in, regulate and clean the appliance or perform user maintenance (BS EN 60335-1).

CAUTION: Some parts of this product can become very hot and cause burns. Particular attention has to be given where children and vulnerable people are present (BS EN 60335-1).

HOW TO USE YOUR CARAVAN'S EQUIPMENT

WARNING: In the unlikely event of leaks in the gas system, or if there is a smell of gas:







- Extinguish all naked flames
- Switch off all appliances and do not operate any electrical switches
- Turn off all gas appliances
- Open windows and doors for ventilation

- Do not smoke
- Shut off gas operation
- Leave the vehicle

Immediately ensure that the system is thoroughly checked by a registered gas engineer at a Whale Approved Service Centre or by a member of the Whale Service Engineer Network.

Specification

Flue Type	Type C ₁₃ & C ₅₃ (fanned)
Destination Countries	AT, BE, BG, CH, CY, CZ, DE, DK, EE, FI, FR, GB, GR, HU, HR, IS, IT, LT, LU, LV, MT, NL, NO, PL, RO, SE, SI, SK, TR
Dry Storage Temperature	-20°C to 70°C
Battery Supply	10.5V - 15.9V
Gas Supply	LPG: Butane/Propane 30mbar - CAT I _{3B/P (30)}
Battery Supply	10.5V - 15.9V

HEAT AIR	Qn (kW) 	Qn (kW) 	M (g/hr) 	V (M ³ /hr) 	Fuse size (A) 	230V ~ 50Hz (A)	(Kg) 
SL5512XX	5.45	4.70	342	220	10	13	8.7
SL7512XX	6.75	6.00	436	220	10	13	8.7
SL5502XX	5.45	4.70	342	220	10	13	8.7
SL7502XX	6.75	6.00	436	220	10	13	8.7

Application (BS EN 624)

Operation while driving (BS EN 624), (UNECE R122)

Throughout Europe, this appliance may be used while driving (according to the directive UN ECE R 122) if the system includes a gas pressure regulator with an appropriately configured gas installation. National regulations and rules **must be** followed.

Directive UN ECE R 122 stipulates that a safety shut-off device is required if this appliance is operated while driving.

If no safety shut-off device has been installed, the gas cylinder must be closed when driving.

To prevent damage to the appliance from spray water, such as when cleaning the vehicle, do not spray water directly into the exhaust duct, combustion intake or on the heater housing and connections.



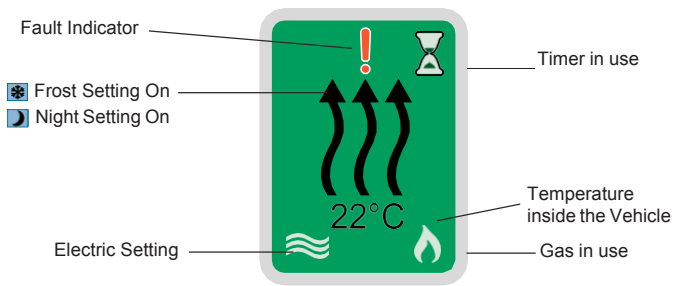
These symbols indicate that this appliance is suitable for use in road and leisure accommodation vehicles **ONLY**, it is **NOT** suitable for static homes.



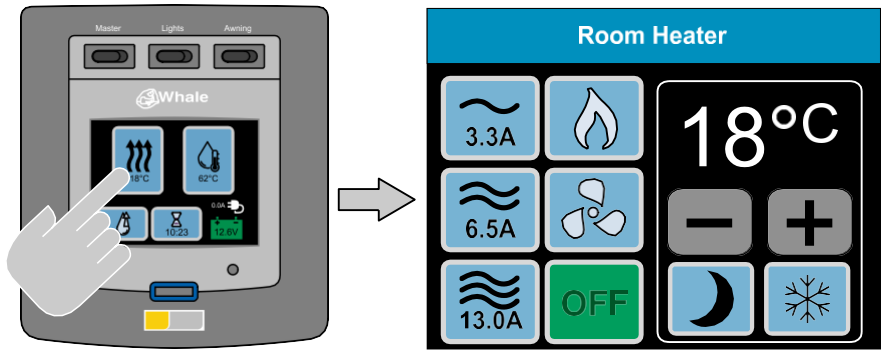
This symbol indicates that this appliance is **NOT** suitable for use on boats.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

IVAN CONTROL PANEL - Instructions for Use























Space Heater Icon



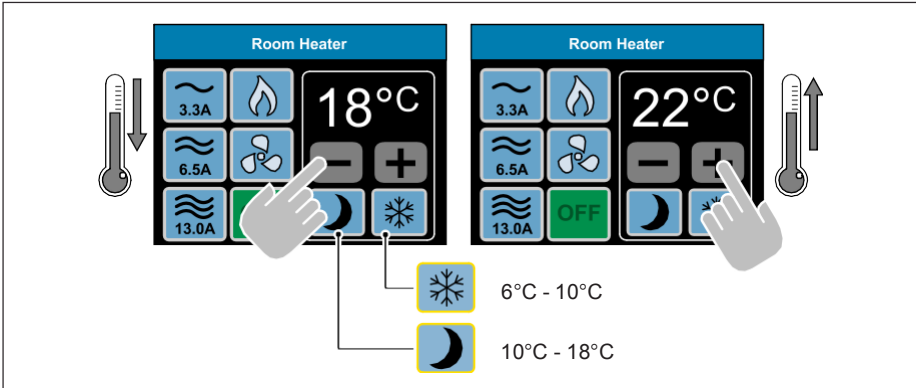
Room Heater Control Screen

HOW TO USE YOUR CARAVAN'S EQUIPMENT

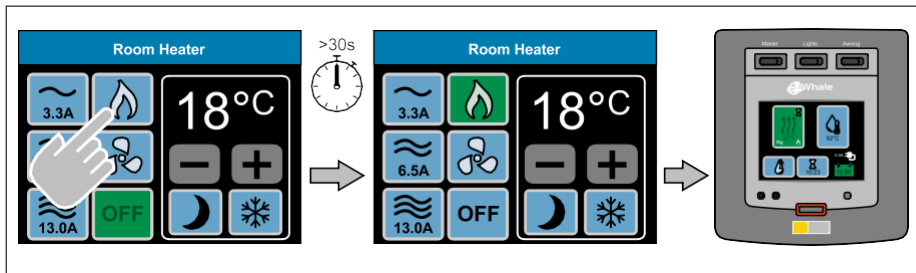
Icon	Description	Icon	Description
	0.75kW Electric Off		0.75kW Electric On
	1.50kW Electric Off		1.50kW Electric On
	3.00kW Electric Off		3.00kW Electric On
	Gas Off		Gas On
	Fan Off		Fan On
	Off Button Active		Off Button Inactive
	Night Mode (10°C - 18°C) Off		Night Mode (10°C - 18°C) Active
	Night Mode Selected		
	Frost Protection Mode (6°C - 10°C) Off		Frost Protection Mode (6°C - 10°C) Active
	Frost Protection Mode Selected		
	Increase Temperature Button		
	Decrease Temperature Button		

HOW TO USE YOUR CARAVAN'S EQUIPMENT

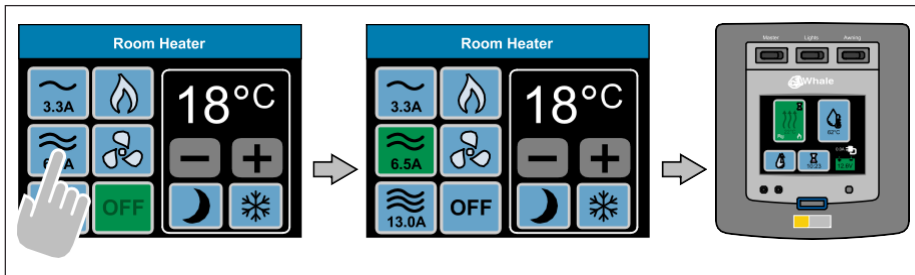
1. Select Temperature






2. Activate Gas Power



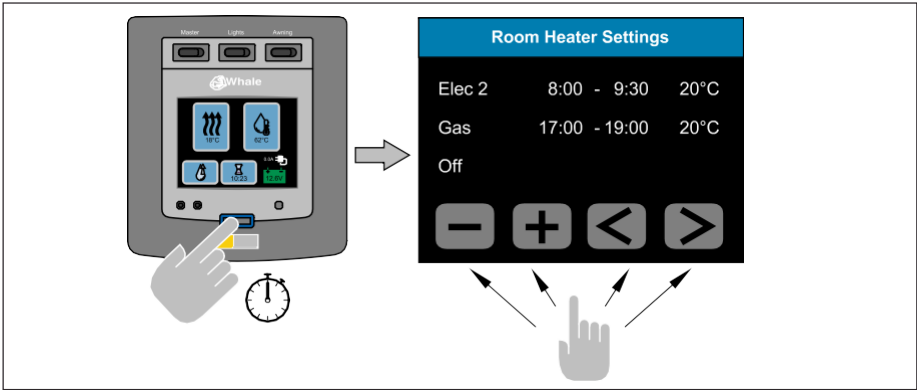
3. Activate Electric Setting



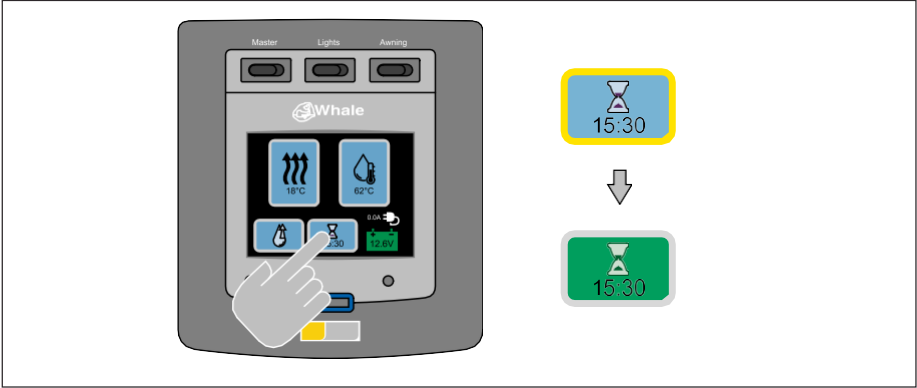
HOW TO USE YOUR CARAVAN'S EQUIPMENT

Usable Electric Settings	
6A 0.75kW 230V a.c.	
10A 1.50kW 230V a.c.	
16A 3.00kW 230V a.c.	

4. Setting Timers

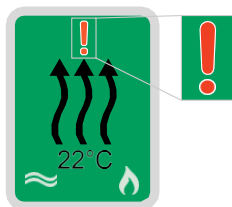


5. Activating Timers

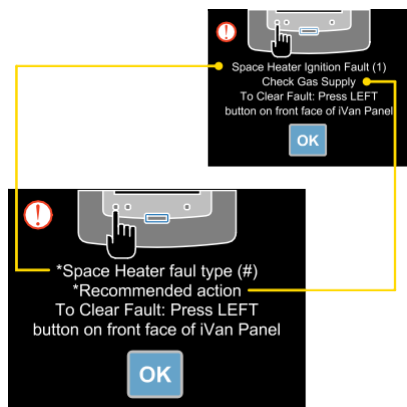


Troubleshooting

Step 1 - Space Heater Lockout



Step 2 - Identify Lockout



Step 3 - Recommended Action

Fault type #1 - Inadequate gas supply

1. Check gas
2. 30mbar LPG
3. Go to step 4

Fault type #2 - Overheat

1. Check air vents and ducts are not restricted
2. Wait 10 mins for heater to cool down
3. Go to step 4

Fault type #3 - Inadequate supply voltage

10.5 - 15.9V d.c. Heater inoperable under 10.1V
 $\geq 10.5 / \leq 15.9V$ d.c. ✓
 $< 10.5 / > 15.9V$ d.c. ✗
 Go to step 4

Fault type #4 - Flue blockage

1. Check flues for blockages
2. Go to step 4

Fault type #5-11 - Internal fault

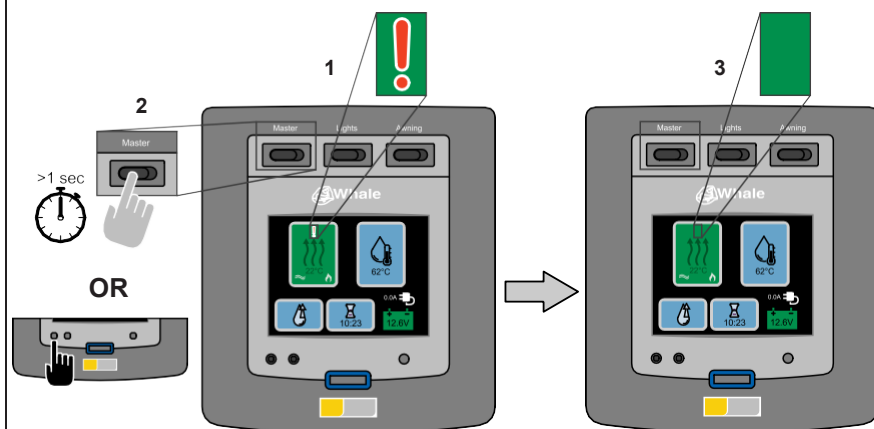
1. Go to step 4
2. Call Whale support +44 (0)845 2172933

Fault type #15 - Multiple faults

1. Power off
2. Check heater for recurring faults
3. Power on
4. Go to step 4.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

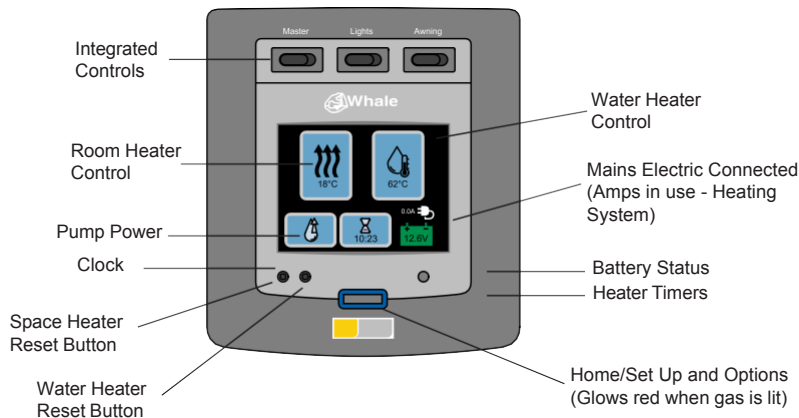
Step 4 - Clear Lockout



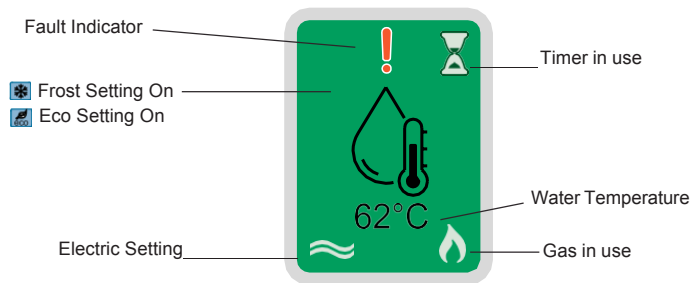
If problems persist, please contact Whale Support on +44 (0)845 217 2933.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

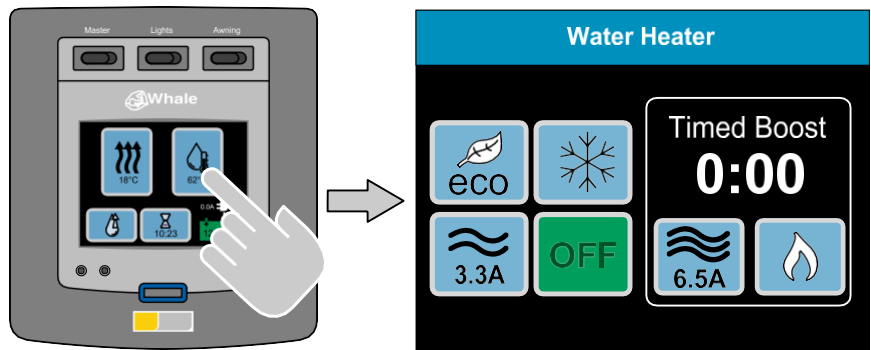
Whale iVan Control Panel - Water Heater



Whale iVan Control Panel

















Water Heater Button All On



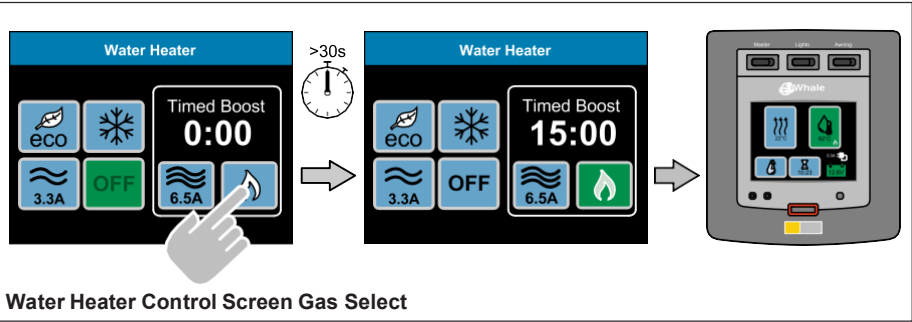
Water Heater Control Screen

HOW TO USE YOUR CARAVAN'S EQUIPMENT

Water Heater Control Icons and Descriptions

Icon	Description	Icon	Description
	0.75kW Electric Off		0.75kW Electric On
	1.50kW Electric Off		1.50kW Electric On
	Gas Off		Gas On
	Off Button Active		Off Button Inactive
	Frost Protection Mode (5°C) Off		Frost Protection Mode (5°C) Active
	Frost Protection Mode Selected		
	Eco Mode (55°C) Off		Eco Mode (55°C) Active
	Eco Mode Selected		

1. Activate Gas Power



and/or

2. Activate Electric Setting

Water Heater

eco

3.3A

5A

OFF

Timed Boost

0:00

>30s

Water Heater

eco


3.3A

6.5A

OFF





Timed Boost

15:00




Water Heater Control Screen Electric Select

Whale iVan® Control Panel - Usable Electric Settings for Water Heater

Usable Electric Settings		
6A 0.75kW 230V a.c.		
10A 1.50kW 230V a.c.		

3. Setting Timers for the Water Heater



Water Heater Settings

Elec

8:00 - 9:30

Gas

17:00 - 19:00

Off

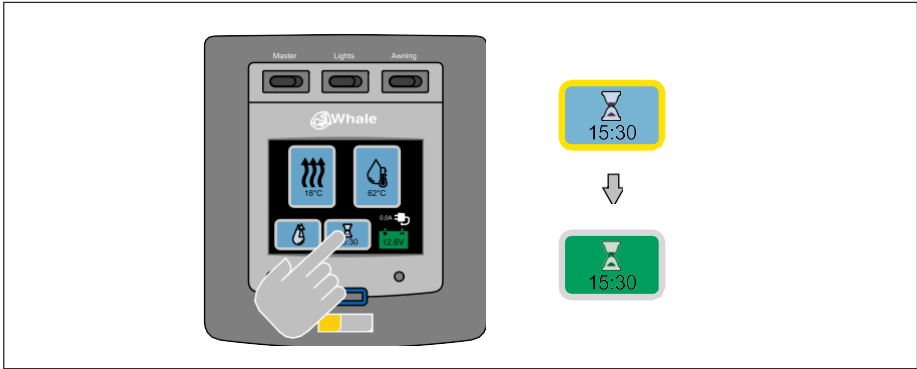
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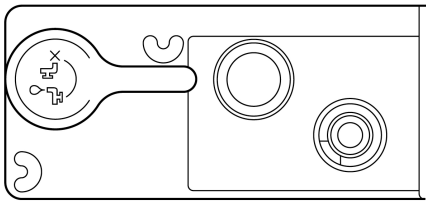
4. Activating Water Heater Timers



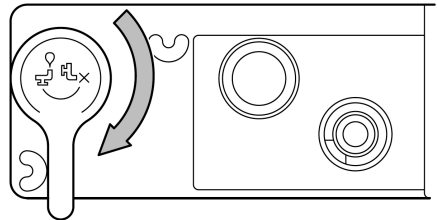
Operating Instructions - Drain Valve

The Water Heater must be drained before travelling or if it is not being used for a period of more than 3 days, or if there is a danger of freezing (unless Frost Protection setting is active). Check the heater has fully drained if there is a risk of freezing. The drain valve is located at the top of the water heater beside the cold and hot water inlet. To operate the drain valve, turn the yellow lever clockwise 90 degrees.

If the plumbing system in the vehicle causes air locking preventing the water heater from draining, consideration should be given to fitting a vacuum relief valve, Whale Part # AK1228.



Drain Valve - Closed Position



Drain Valve - Open Position

Winterising

If the Water Heater is not going to be used for more than 3 days, disable the Water Heater on the control panel, isolate the gas supply by ensuring the gas shut off valve to the Water Heater is closed and that the gas supply is turned off (if no other gas appliances require a continued supply). The Water Heater must be fully drained to avoid risk of freezing.

General Safety Note: The operating pressure of the gas supply to the Water Heater must be either 28-30mBar Butane or Propane.

Maintenance

To clean and sterilise inside the Water Heater use diluted sterilising fluid and fully rinse through with clean water afterwards. The outside of the appliance should not normally require cleaning. If it does, isolate the electrical supplies and wipe down with a soft, damp cloth only. Do not use abrasive cleaners. Allow to fully dry before reconnecting the electrical supplies. If descaling of this appliance is required, this can be done using a domestic liquid descaling product and fully rinse through with clean water afterwards. Cleaning and user maintenance must not be carried out by children without supervision.

Please Note: Water will drip from the discharge pipe of the pressure-relief valve during heating up. The pressure relief valve must be operated regularly (at least twice a year) by turning the yellow lever in the anti-clockwise direction, to remove lime deposits and to ensure that it is not blocked.

The Water Heater must be checked periodically by a Whale Approved Service Centre/Technician, or a competent person, at least annually. This must be completed according to the practice in the country where it is used and according to the Whale instructions. Whale recommends annual testing of gas soundness and combustion by an accredited LPG engineer. The appliance contains ESD sensitive components and therefore must only be opened by a Whale Approved Service Centre/Technician.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

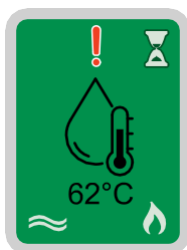
Whale iVan Control Panel

iVan" is equipped with an electronic diagnostic system which will detect fault conditions ranging from poor gas or d.c. supply to internal Water or Space Heater malfunctions. In the unlikely event of a fault, this will be indicated by a red '!' on the Water or Space Heater icon on the Home Screen.

The Water Heater will not operate when a fault is indicated on the home screen. A pop-up screen will appear when you attempt to operate the Water Heater. The pop-up screen identifies the fault. As soon as you have completed the suggested actions on the fault screens you must clear the fault code by pressing OK.

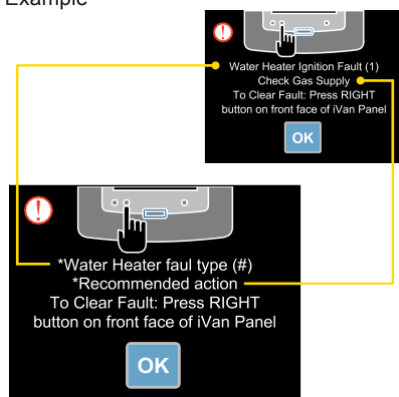
When the lockout has been cleared successfully, the Water Heater will default to 'Off'. The user must select the desired power operation to operate the Water Heater. Please follow the advice on screen, as outlined in the table below.

Step 1 Space Heater Lockout



Step 2 Identity Lockout

Example



Step 3 Recommended Action

Fault type #1 - Inadequate gas supply

1. Check gas
2. Temp <5°C, use Propane rather than Butane
3. Check flues for blockages
4. Go to step 4

Fault type #2-3 - Overheat Fault

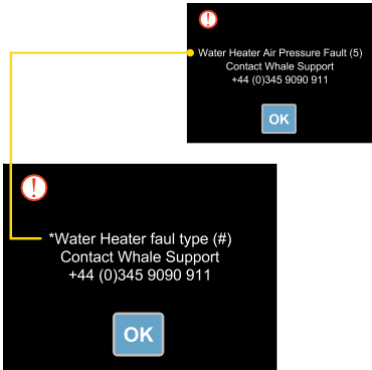
1. Check the heater is completely full of water
2. Run pump with one hot tap open until water flows smoothly
3. Go to step 4

Fault type #4 - Low Voltage Fault

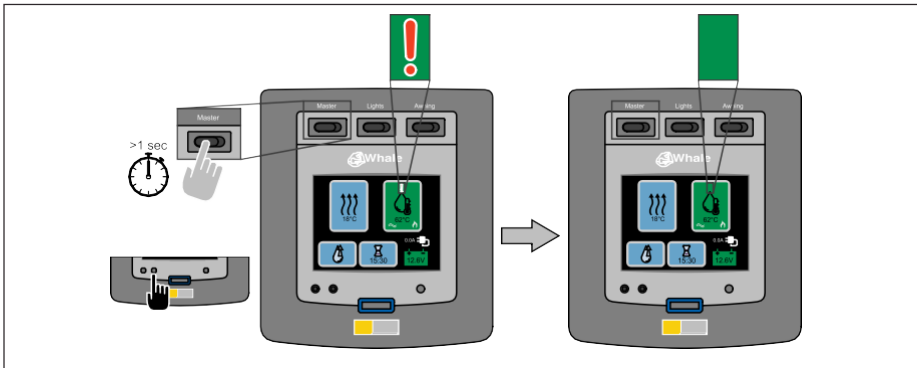
10.5 - 15V d.c. Heater inoperable under 10V
 ≥ 10 / ≤ 15 V d.c.
 < 10 / > 15 V d.c.
 Go to step 4

Fault type #5 - Air Pressure Fault

1. Check flues for blockages
2. Go to step 4

Step 2 Identity Lockout	Step 3 Recommended Action
<p>Example</p> 	<p>Fault type #6-11 - Internal Fault</p> <ol style="list-style-type: none"> 1. Go to step 4 2. Call Whale Support +44 (0)345 9090 911 <p>Fault type #15</p> <ol style="list-style-type: none"> 1. Power off 2. Check heater for recurring faults 3. Power on 4. Go to step 4

Step 4 Clear Lockout



If problems persist, please contact Whale Support on +44 (0)345 9090 911.

Winterising

When using the Water Heater in winter, ensure the flue is not blocked by snow or fallen leaves etc. When not in use the Water Heater must be fully drained. This is particularly important during the winter months as a precaution against freezing. To drain, switch off the water pump at either the pump switch or main switch. Open all the hot water taps in the vehicle and operate the drainvalve fitted in the system. The drain valve must be left in the "open" position to ensure all the water drains out.

**ALDE HEATING (3030 CONTROL
PANEL)(CRUSADER/BUCCANEER)**

Turning the boiler on and off

Start the system by pressing the On/Off button on the control panel (Fig. 1). The start image is displayed (Fig. 2) and the system starts with the last selected settings. When the heating system and control panel are on, a green diode lights up on the On/Off button.

To turn off the heating system, press the on/off button. The control panel and LED switch off.



Fig 1. System switched off, LED off



Fig 2. System starts, LED lights up

Note: If the “Status page” is set to “Dark”, the Control Panel goes dark when it enters sleep mode, but lights up when you touch the screen.

Status Screen

When the control panel enters sleep mode, the status screen appears. Tap the respective symbol on the status screen to reach its submenu. Press the “MENU” button to reach the Settings menu. Features marked with asterisks (*) are accessories.

Symbol description of the top row of the status screen (Fig. 3)	
	Operating messages. Displayed if temporary service interruption occurs, this is not an error. Await. See Operating messages.
	Information. Flashes when there is an information message.
	230V. Electricity (230V) is connected to the boiler.
	Day Mode. Appears when the feature is on and turns green when it is active.
	Night Mode. Appears when the feature is on and turns green when it is active.
	LPG bottle full/empty*. Appears if a DuoControl is installed. Black bottle = Gas available. Red bottle = One bottle empty.
	EisEx*. Appears if EisEx is turned on and turns green when active.
	Engine heating*. Shown if the engine heater is installed and turned on and turns green when active.
	Anti-bacteria. The boiler's automatic bacterial elimination setting is running.
	High altitude mode. Flashes if the high altitude mode is active.
	Alde AquaClear UV-C*. Water filter.



**Fig 3. Top
row of
status
screen**








Symbol description of the top row of the status screen (Fig. 4)	
	Indoor temperature shows the current temperature and whether the circulation pump is active (O). Tap the icon to change the desired temperature.
	Zone icons (dual zones). Displays the current temperature and whether the circulation pump is active in the zone (O). Tap the icon to change the desired temperature.
	Light*. Start, turn off, or dim the AC lighting (only with Truma AC)
	Energy. Shows the energy source used; the flame turns red when gas is in use and the flash turns yellow when electricity is in use. Tap the icon to select and prioritise energy source and to set load monitor* and high altitude mode.
	Hot water. Indicates whether hot water production is on, "boost" or turned off  . Press the respective controls to start/switch off or increase hot water production. The thermometer fills up entirely when the hot water reaches boost temperature. See Hot water section.
	Outdoor temperature*. If an outdoor sensor is installed, the current outdoor temperature is displayed.



Fig 4. Main menus on the Status screen

Set the desired temperature

The temperature can be set from +5°C to 30°C in increments of 0.5°C. To set the temperature, press "Indoor" (single zone)/ "Respective zone" (dual zone). The temperature shown (Fig. 5) reflects the temperature currently set.

- To raise the temperature, press the plus button to the right of the temperature.
- Lower the temperature by pressing the minus button, to the left of the temperature.

You can leave the menu by clicking the Back arrow in the upper left part, or by pressing the "MENU" button once; the heating system works directly to reach the set temperature.

WARNING: Scalding Hazard

When the hot water and glycol mixture in the boiler are heated at the same time, the hot water can become very hot in the event of a significant heating requirement.

Hot Water

In the boiler there is a built-in water heater with a capacity of about 8.5 litres. The boiler can be used even without fresh water being in the heater. There are three different settings for hot water: no hot water, normal operation and boost (prioritised hot water) Fig. 6

- No hot water or normal operation. Press the on/off button on the screen under hot water to switch between no hot water production and normal hot water production.



Fig 5. Set temperature

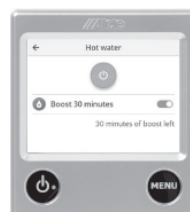


Fig 6. Set up hot water production

HOW TO USE YOUR CARAVAN'S EQUIPMENT

- “Boost”, (prioritised hot water production). Tap the slider to the right of the text that reads “Boost 30 minutes”. The boiler will now prioritise the production of hot water for 30 minutes. After 30 minutes have passed, the boiler returns to its previous setting. Prioritised hot water production is recommended for increased hot water demand.

Energy sources

The boiler can be powered either by gas or electricity or both at the same time. The fastest heating is obtained by using both energy sources at the same time as the overall power available will be greater. Hence, more power, equals faster heating. It is also possible to prioritise which energy source to use, when both gas and electricity are switched on; in the event of high heat demand, both are activated. When the boiler approaches the set temperature, energy consumption is gradually reduced.



Fig 7. Choice of energy sources

Heating with electricity

The consumption selected in the menu is the maximum consumption permitted, i.e. the boiler does not use more power than is required, even if e.g. 3kW is selected in the Control Panel.

- Tap the “Max electricity” menu bar ⚡ to open the electric power settings menu.
- Increase or decrease the maximum permissible electrical power between 0-3 kW using the plus and minus buttons. 0 kW equals electric operation being switched off.
- Confirm your selection by pressing the “Set” button. Press “Cancel” to cancel.

Heating with gas

Tap the slider on the “Gas” menu bar 🔥 to start and shut off gas operation. (Fig 7).

High altitude mode

High altitude mode is only to be used if the boiler will be powered by LPG at altitudes exceeding 1000m above sea level. For high-altitude LPG operation, use propane to ensure stable combustion. Varied operating conditions at high altitudes may cause the boiler to not always reach full gas operation. Tap the slider on the “High altitude mood” menu bar ⚡ to start and turnoff throttle. (Fig. 7)

Settings menu

To reach the Settings menu from sleep/standby screen, press the "MENU" button. Features marked with asterisks(*) are accessories. The Settings menu provides the following features:

The Settings menu (Fig. 8)

	Night Mode. Automatically changes select features during the night. Choose the time interval and whether it should be done every night or a specific night each week. The following can be changed: temperature, status screen light, putting AC* into night operation and changing AC sensors, turning off hot water production and underfloor heating*.
	Day Mode: Automatically changes select features throughout the day. Choose the time interval and whether it should be done every night or a specific night each week. The following can be changed: temperature and hot water production.
	AC* (Truma only). Start or turn off automatic climate setting (=AC and the heating system work together); for dual-zone installation, choose which zone the AC should follow.
	Underfloor heating*. Underfloor heating. Turn the underfloor heating on and off. Select continuous operation of the underfloor heating by activating "Continuous".
	Engine pre-heat*. Heat the engine using the Alde heating system. Start or turn off the function, select the start time and the engine heating duration.



Fig. 8 Settings menu


The Settings menu (Fig. 9)

	EisEx, defroster for gas regulator. Prevents ice formation in the regulator during winter. Select on or off, and select whether EisEx should automatically turn on when it is cold. Automatic switch-on requires an outdoor sensor to be installed.
	Delayed start, automatic boiler start. Start or turn off the feature, select start and end time. For the function to work, the boiler must be switched off.
	<p>External start. The function is used when starting the boiler from outside. When external startup is enabled, the panel should be turned off. External start has three modes: Off, External start and 230V.</p> <p>Off. The function is turned off.</p> <p>External start* The function is used when starting the boiler with external start, by switching the "Ext Start" connector on the boiler's circuit board. When the External Start function is activated, the control panel should be turned off but 12V is connected.</p> <p>230V. The function is used to start the boiler by connecting 230V to the vehicle. When the 230V function is activated, the control panel should be switched off but 12V connected. Some vehicles may be equipped with their own solution (winter coupling).</p>
	Temp sensor calib. offset for temperature sensor. If you feel that the temperature sensor should be slightly adjusted, the temperature can be adjusted by $\pm 5^{\circ}\text{C}$. Also applies to outdoor temperature sensor.



Fig. 9 Settings menu

The Settings menu (Fig. 9) continued

	Display. Select panel brightness: Low, Medium or High. You can also choose whether the status screen should be Normal, Inverted or Dark. If Dark is selected, the panel will go dark after 30 seconds and will light up again if touched.
---	---

The Settings menu (Fig. 10)






	Sound. Start or turn off button and warning/notification sounds.
	Language. Change the language in the Control Panel menus; available languages are: English, German and French.
	Service. Displays values from the heating system; these are updated continuously and describe the current status of the boiler. See Service Menu & Reset.
	System configuration, enable installed accessories and features. Here, you will find all accessories or functions that can be connected to the Alde Heating System; tick the features that are installed in the heating system to enable their use.
	Reset. Resets the panel to factory setting. The accessories/features selected under System Configuration are not affected.



Fig. 10 Settings menu

Glycol fluid

The system must be filled with a fluid mixture consisting of distilled water and glycol. We recommend using a high quality premixed glycol (with inhibitors) intended for aluminium heating systems. When using concentrated glycol, the mixture must consist of 60% distilled water, or water with no salt content and 40% glycol. The use of tap water may cause corrosion and affect the warranty.

If the system is exposed to temperatures lower than -25°C, glycol content must be increased, but must not exceed 50%.

Note: If the glycol fluid is not replaced at appropriate intervals, there is a risk of frost damage, corrosion, bacterial growth and/or overheating.

The glycol mixture must be changed every two years, as properties such as corrosion protection degrade. If Alde Premium Antifreeze is used, the replacement period can be extended to max. 5 years of normal use.

Refill the heating system with glycol liquid

Glycol content should be checked at the expansion vessel using a glycol tester before refill, to ensure that the concentration of glycol in the liquid is not too high. If the liquid level has dropped for reasons other than evaporation, check all joints, rubber hoses, drain taps and air screws for leakage before filling.

The glycol system is manually replenished in the expansion vessel. When manually filling, slowly pour the glycol mixture into the expansion vessel. The level must be approx. 1cm above the MIN. line (Fig. 11) when the system is cold.

If there are 2 zones, both zones must be vented in the system after filling. Top up if the glycol level drops after venting. Vent a newly-filled heating system regularly.

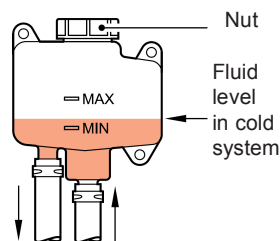


Fig. 11 Expansion Vessel

Service Information & Reset

Tap "Service Information" to get to the service menu (Fig. 12). Here, you will see values from the heating system (Fig. 13); the values are updated continuously.

Touch "Reset" (Fig. 12) to reset the Control Panel to factory settings. After resetting, the system will be set as follows:

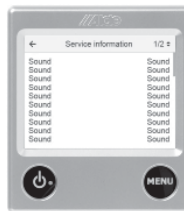
- Heater - Off mode/Boiler - Off
- Max. electricity - 1 kW/Max. electricity - 1 kW
- Gas heating - On mode
- Target temperature - 22.0°C/Temperature setting - 22.0°C
- Hot water - In normal mode

All other functions will be switched off. The accessories/functions selected under "System configuration" are not affected by resetting.

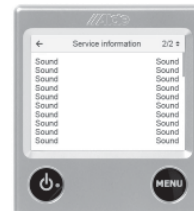


Service and Reset

Fig. 12 Control Panel menus



Service page 1



Service page 2

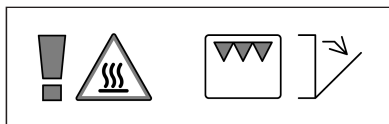
Fig. 13 Service Information

For further information please refer to the Manufacturers operating instructions which are supplied with your vehicle.

OVEN (ALL RANGES)

Safety

- This appliance may be used by children aged 8 years or older and persons with reduced physical, sensory or mental capabilities and/or lack of experience and knowledge only if they are supervised or have been given instructions on the safe use of this appliance and understand the potential hazards.
- Keep children younger than 8 years away from the appliance, except under constant supervision.
- Do not allow children to play with the appliance.
- Do not allow children to clean or maintain this equipment unattended.
- Use only parts supplied by the manufacturer.
- Do not change or adjust anything on the appliance, unless the change is authorised by the manufacturer or its representative.
- If the power cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Use the appliance for cooking only and not for anything else, for example room heating. This can lead to carbon monoxide poisoning and overheating. The manufacturer cannot be held liable for damage resulting from improper use or incorrect setting of the controls.
- This appliance is not intended to be operated by means of an external timer or separate remote-control system.
- The use of this gas cooking appliance results in the production of heat, moisture and products of combustion in the room in which it is installed. Ensure the room has sufficient ventilation when the appliance is in use. During prolonged use, additional ventilation may be needed by opening a window or increasing the extraction force of the hood.
- Never extinguish a cooking fire with water. Turn the burner off and cover the flame with a lid or a fire blanket.
- The appliance and its accessible parts become hot during use. Care should be taken to avoid touching heating elements.
- The cooking process must be supervised. A short term cooking process must be supervised continuously. Unattended cooking on a hob with fat or oil can result in fire. Do not leave the appliance unattended when in use.
- The use of inappropriate hob guards can cause accidents.
- Danger of fire, do not store items on the cooking surface of the hob.
- The burners and pan supports are hot during and after use. Allow all parts to cool before touching them, as this can cause serious injury.
- The food shelves and trays in the appliance are hot during and after use. Allow all parts to cool before touching them, as this can cause serious injury. Always use oven gloves when removing the shelves and trays.
- Do not store items in the appliance.
- Do not put heavy objects on the open appliance door.
- The appliance and accessible parts become hot when the grill is in use. Young children should be kept away.
- **CAUTION:** hot surfaces. Refer to manual for grill operation. Grill door must be open when grill is in use.
- In the event that abnormal drift in cooking temperature of the oven is observed, have the thermostat checked by a qualified service engineer.



HOW TO USE YOUR CARAVAN'S EQUIPMENT

- Care should be taken not to overload the oven, allowing adequate spacing to ensure free circulation of heat.
- Do not use steam cleaners or pressure washers to clean the appliance. See Maintenance and Cleaning for instructions.
- Do not allow oil or fat to build up on the appliance. Clean the appliance after each use.
- Before cleaning or maintenance work the appliance must be left to cool and be disconnected from the gas and electrical supplies.
- The glass lid may snap shut towards the end of lowering due to the travel-lock action of the hinges. Make sure all fingers are clear of the appliance when closing the lid.
- Do not use harsh abrasive cleaners or sharp metal scrapers to clean the surface of the glass, since they can scratch the glass surface which may result in shattering of the glass.
- Remove any spillage from the glass lid before opening the lid.
- Do not shut the glass lid when the burners are lit or still warm.



Before using the appliance:

- Ensure that all packaging materials have been removed.
- Clean the appliance with warm water and household detergent and dry carefully with a soft cloth.
- Ensure that the gas supply is connected and turned on.
- Ensure that the appliance is connected to the 12V DC battery for the cooling fans and spark ignition.
- Ensure that the pan supports are positioned properly.
- Ignite the gas burners and let them burn to expel odours and vapours first.
- Ignite the burner and heat the grill for about 20 minutes to eliminate any residual factory lubricants that might impart unpleasant smells to the food being cooked. Smoke may occur during this procedure. Open any windows and turn on mechanical ventilators to help remove the smoke.
- Ignite the burner and heat the oven for about 30 minutes at 200°C to eliminate any residual factory lubricants that might impart unpleasant smells to cooked food. Smoke may occur during this procedure. Open any windows and turn on mechanical ventilators to help remove the smoke.

Dual Fuel only:

- Ensure the electricity is connected and switched on.
- Prime the hotplate by switching on the hotplate for a short period, without a pan, to harden and burn off the coating. Use a medium to high setting for 3-5 minutes. Allow adequate ventilation to disperse any smoke that occurs during this process. Allow the hotplate to cool.
- Season the hotplate by heating the hotplate for 30 seconds on a medium setting and then switching off. Pour a minimal amount of unsalted vegetable oil onto a clean dry cloth or paper towel and apply a thin coat of oil to the hotplate.

surface. Wipe off any excess oil, then heat the hotplate on a medium setting for 1 minute. Occasional seasoning will help to maintain the hotplate's appearance.

Only use LPG (Liquefied Petroleum Gas). The appliance operates on propane or butane. Propane is preferred over butane, because butane provides poor performance at an ambient temperature below 10°C and cannot be used at an ambient temperature below 5°C.

Oven shelf: (Applies to K1520 only)

- The oven shelf allows good circulation at the rear of the oven.
- A raised bar at the rear of the shelf prevents trays or dishes making contact with the back of the oven.
- To remove a shelf, pull it forward until it stops, raise at the front and remove.
- The oven shelf allows good circulation at the rear of the oven.

Only use LPG (Liquefied Petroleum Gas). The appliance operates on propane or butane. Propane is preferred over butane, because butane provides poor performance at an ambient temperature below 10°C and cannot be used at an ambient temperature below 5°C.

Cooling system: (Applies to K1520 only)

This appliance is fitted with an automated cooling system.

- The cooling fan will automatically switch on a few minutes after the grill and/or oven is turned on and will remain on even after the appliance has been switched off.
- The fan will automatically switch off a few minutes after the appliance has been switched off, when the appliance has cooled sufficiently.
- When either the grill or oven is first lit or after switching off, the cooling fan may operate intermittently, this is normal.

Maintenance and cleaning

Thetford recommends an annual inspection service by an approved service centre. Between annual servicing, clean the appliance regularly after use. Before any cleaning work is started, the appliance should have been left to cool and be disconnected from the gas and/or electrical supplies.

- Always remove any spills or contamination immediately after use with soap and hot water. Towel dry the surface with a soft cloth.
- Use a non-abrasive multi-purpose cream cleaner and a nylon scourer pad to clean more stubborn dirt or grease.
- Use a proprietary stainless steel cleaner or polish to remove superficial surface scratching.
- Do not use abrasive cleaners, metal scouring pads or hard brushes. They could damage the appliance.
- If you clean the burner rings, ensure that the holes are not clogged.
- Do not use harsh abrasive cleaners or sharp metal scrapers to clean the glass surface, since they can scratch the glass surface which may result in shattering of the glass.
- Do not leave wet cloths, cleaning pads, residues of food or cleaning products or other dirt to dry on the surface. It can cause pitting, marking or even rusting.
- Always clean in the direction of the brushed finish and not across the grain.
- Cleaning agents containing bleach should not be left in contact with stainless steel.
- Mineral content in water (such as iron or limescale) can affect the appearance of the metal.
- Remove any spillage from the glass lid before opening the lid.
- The control knobs can be removed for cleaning. The knobs are easy to replace.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

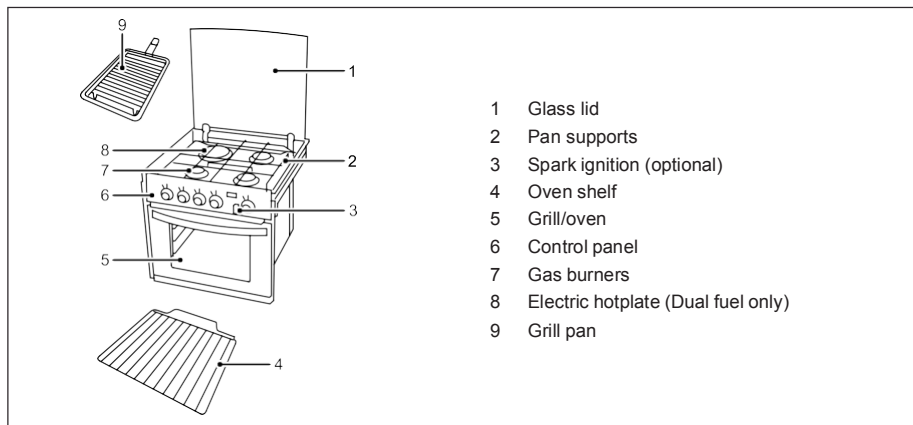
Troubleshooting

Problem	Possible cause	Solution
Burners do not burn or burn unevenly	Gas bottle is empty Gas tap is closed Burner caps are not correctly positioned Burners are wet or clogged	Change gas bottle Open tap Allow caps to cool, then reposition them Dry or clean burners
Spark ignition does not spark	12V DC battery is discharged Connections are loose Ignition points are wet or dirty	Charge battery Secure connections Dry or clean ignition points
Control knobs do not function	Knobs are mounted incorrectly	Install knobs correctly

If you cannot solve a problem, contact the authorised local Service Centre or Thetford Customer Service in your country.

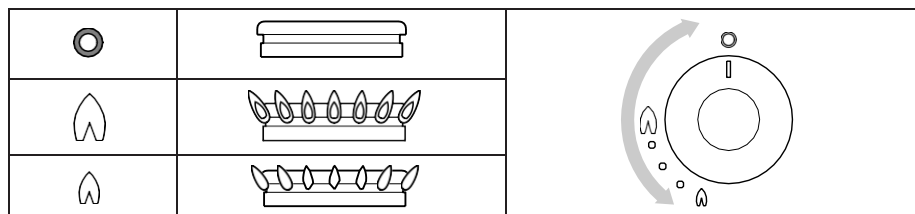
TRIPLEX (XPLORE ONLY)

Main Components



The types of burners may vary depending on the type of appliance. Refer to Technical specifications for further details.

Use of the burners



For the exact location of the control knobs, see Main components.

Turning on:

- Push and turn the control knob.
- Turn the control knob anti-clockwise to the full rate position.
 - For spark ignition models: Push the ignition button.
 - For non-ignition models: Hold a lit match or gas match to the burners.
- Keep the control knob pressed for about 10-15 seconds and then release it.
- Adjust the height of the flame.



If the burner accidentally extinguishes turn the control knob to the 0 position and wait at least 1 minute before re-igniting the burner.



If the burner has not lit within 15 seconds turn the control knob back to the 0 position and release it. Wait at least 1 minute and repeat the steps above to turn on the appliance.

Turning off:

- Turn the control knob clockwise to the 0 position to turn off the burner.



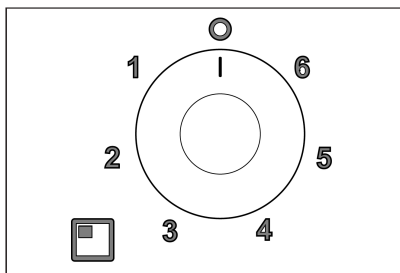
Always make sure the control knob is in the 0 position when you have finished using the gas burners.



Do not shut the glass lid when the burners are lit or still warm.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

Use of the electric hotplate(if applicable)



For the exact location of the control knob, see Main Components:

Turning on:

- Rotate the control knob either clockwise or anti-clockwise to the required position(1-6).

For maximum efficiency, a correctly sized pan with a flat heavy gauge base should be used. The pan size should be the same or slightly larger than the hotplate (up to 1 1/2.5cm oversize).

Turning off:

- Turn the control knob to the 0 position to turn off the hotplate.

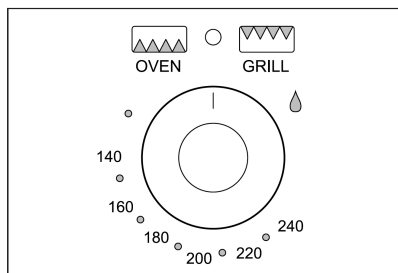


Always make sure the control knob is in the off position when you have finished using the hotplate.



Do not shut the glass lid when the hotplate is turned on or still warm.

Use of the grill



For the exact location of the control knob, see Main components.

Turning on:

- Open the door and push the control knob.
- Continue pressing the control knob and turn it anti-clockwise to the full rate position.
 - For spark ignition models: Push the ignition button.
 - For non-ignition models: Hold a lit match or gas match to the burner.
- Keep the control knob pressed for about 10-15 seconds and then release it.



The grill is only to be used at its nominal heating setting.

- Depending on the food to be cooked, the correct grilling height can be achieved by inverting the pan trivet into either the high or low position.
- The grill pan supplied is multi-functional, for use in grill or oven and the handle design allows removal or insertion whilst the pan is in use. Always remove the handle when the pan is in use.
- Place the shelf in the required position.



The grill door must remain open when lighting and using the grill.



If the burner accidentally extinguishes, turn the control knob to the 0 position and wait at least 1 minute before re-igniting the burner.

HOW TO USE YOUR CARAVAN'S EQUIPMENT



If the burner has not lit within 15 seconds turn the control knob back to the 0 position and release it. Wait at least 1 minute and repeat the steps above to turn on the appliance.

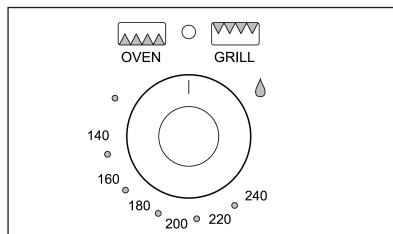
- Although the grill heats up quickly, it is recommended that a few minutes preheat be allowed. A 12 Volt cooling fan operates automatically above the grill cavity.
- It is normal for the flames on this burner to develop yellow tips as the grill heats up.

Turning off:

- Turn the control knob clockwise to the 0 position to turn off the burner.

Always make sure the control knob is in the 0 position when you have finished using the grill.

Use of the oven



For the exact location of the control knob, see:

Turning on:

- Open the door and push in the control knob.
- Continue pressing the knob and turn it anti-clockwise to the full rate position. (240°C, gas mark 7/9).
 - For spark ignition models: Push the ignition button.
 - For non-ignition models: Hold a lit match or gas match to the burner.
- Keep the control knob pressed for about 10-15 seconds and then release it.
- Adjust the required heat setting.
- Place the oven shelf in the required position and close the door.



Ignition must always be carried out with the oven door open.



If the burner accidentally extinguishes turn the control knob to the 0 position and wait at least 1 minute before re-igniting the burner.



If the burner was not lit within 15 seconds turn the control knob back to the 0 position and release it. Wait at least 1 minute and repeat the steps above to turn on the appliance.

Although the oven heats up quickly, a 10-minute preheat is recommended. The oven should reach full temperature in about 15-20 minutes.

Turning off:

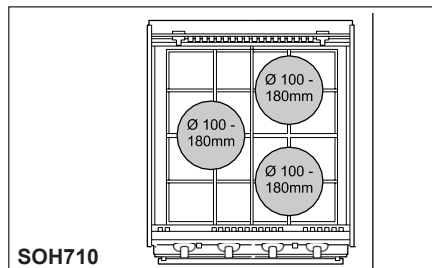
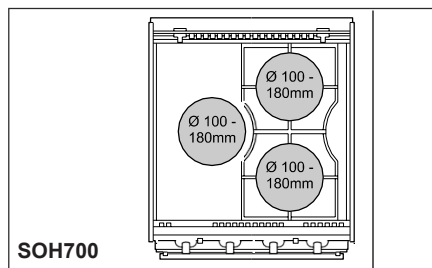
- Turn the control knob clockwise to the 0 position to turn off the burner.



Always make sure the control knob is in the 0 position and the oven door is closed when you have finished using the oven.

Safe cooking

- Do not allow cooking vessels to overlap the edges of the appliance - use the correct sizes of pans and position them centrally over the burners.



HOW TO USE YOUR CARAVAN'S EQUIPMENT

- Ensure that there is at least a 10mm gap between the pans and the edges of the hob.
- Turn the pans so that the handles do not overhang the front of the appliance.
- Ensure that the flame of the gas burner heats the bottom of the pan, not the sides.
- The pans and trays supplied with this appliance are the maximum sizes. Do not use larger pans and trays. They may restrict good circulation of heat, which may increase cooking times.
- The oven shelf allows good circulation at the rear of the oven.
- A raised bar at the rear of the shelf prevents trays or dishes making contact with the back of the oven.
- To remove a shelf, pull it forward until it stops, raise at the front and remove.
- To place a shelf in the oven, lower it at the front and slide it backward until it stops.
- Do not leave the appliance unattended when in use.
- Do not use the appliance while the vehicle is moving.
- Turn the control knob back to the 0 position after cooking.
- Keep the appliance clean and prevent accumulation of grease and food scraps.



Never cover slots or holes in the appliance and never cover a shelf with materials such as aluminium foil. That restricts the airflow and may cause carbon monoxide poisoning.



The food shelves and trays in the appliance are hot during and after use. Allow all parts to cool before touching them, as this can cause serious injury. Always use oven gloves when removing the shelves and trays.




HOW TO USE YOUR CARAVAN'S EQUIPMENT

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.

The table provides a guide to the approximate temperatures at each of the shelf positions with respect to the gas mark setting. Good use can be made of the temperature variation between the shelf positions, as 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.

Table 1: Temperature zones

Gas Mark				Dish
1/4 - 1/2	90°C	110°C	130°C	Meringues
1	110°C	130°C	150°C	Stewed fruit
2	120°C	140°C	160°C	Rich fruit cake, rice pudding
3	130°C	150°C	170°C	Baked custard, shortbread finger
4	140°C	160°C	185°C	Victoria sponge
5	155°C	180°C	200°C	Whisked sponges, ginger nuts
6	170°C	190°C	215°C	Short crust pastry
7	185°C	210°C	230°C	Bread, scones, flaky pastry
8	200°C	220°C	245°C	Puff pastry



Care should be taken not to overload the oven, allow adequate spacing to ensure free circulation of heat.

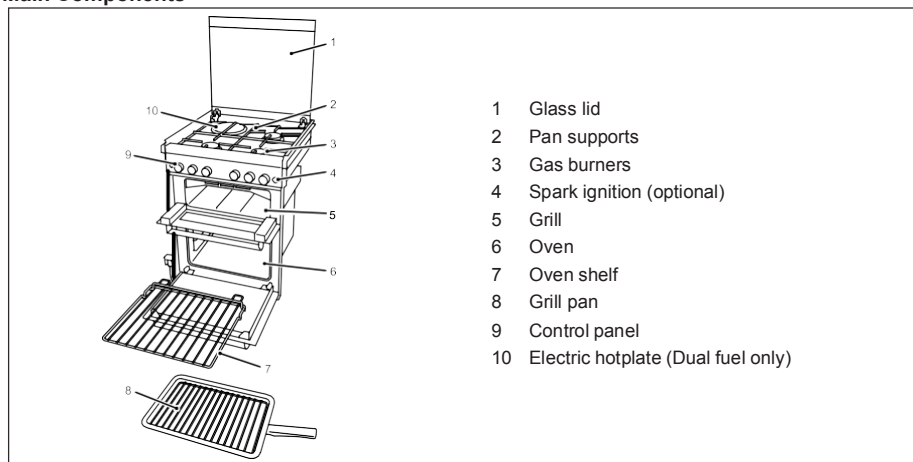


When roasting with aluminium foil ensure the foil does not impair circulation of heat or block any oven flue outlet.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

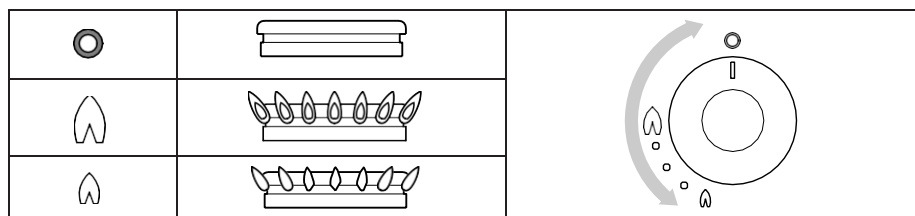
K1520 (ALL RANGES EXCEPT XPLORE)

Main Components



The types of burners may vary depending on the type of appliance. Refer to Technical specifications for further details.

Use of the burners



For the exact location of the control knobs, see Main components.

Turning on:

- Push and turn the control knob.
- Turn the control knob anti-clockwise to the full rate position.
 - For spark ignition models: Push the ignition button.
 - For non-ignition models: Hold a lit match or gas match to the burners.
- Keep the control knob pressed for about 10-15 seconds and then release it.
- Adjust the height of the flame.

If the burner accidentally extinguishes turn the control knob to the 0 position and wait at least 1 minute before re-igniting the burner.

If the burner has not lit within 15 seconds turn the control knob back to the 0 position and release it. Wait at least 1 minute and repeat the steps above to turn on the appliance.



Turning off:

- Turn the control knob clockwise to the 0 position to turn off the burner.

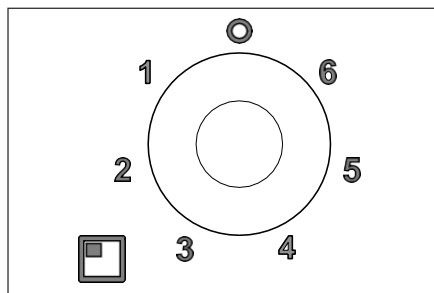


Always make sure the control knob is in the 0 position when you have finished using the gas burners.



Do not shut the glass lid when the burners are lit or still warm.

Use of the electric hotplate(if applicable)



For the exact location of the control knob, see Main Components:

Turning on:

- Rotate the control knob either clockwise or anti-clockwise to the required position(1-6).

For maximum efficiency, a correctly sized pan with a flat heavy gauge base should be used. The pan size should be the same or slightly larger than the hotplate (up to 1 1/2.5cm oversize).

Turning off:

- Turn the control knob to the 0 position to turn off the hotplate.

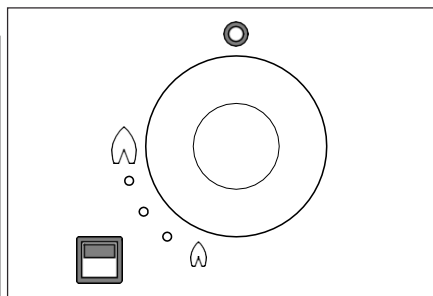


Always make sure the control knob is in the off position when you have finished using the hotplate.



Do not shut the glass lid when the hotplate is turned on or still warm.

Use of the grill



For the exact location of the control knob, see Main components.

Turning on:

- Open the door and push the control knob.
- Continue pressing the control knob and turn it anti-clockwise to the full rate position.
 - For spark ignition models: Push the ignition button.
 - For non-ignition models: Hold a lit match or gas match to the burner.
- Keep the control knob pressed for about 10-15 seconds and then release it.
- Adjust the required heat setting.
- Depending on the food to be cooked, the correct grilling height can be achieved by inverting the pan trivet into either the high or low position.
- The grill pan supplied is multi-functional, for use in grill or oven and the handle design allows removal or insertion whilst the pan is in use. Always remove the handle when the pan is in use.



The grill door must remain open when lighting and using the grill.



If the burner accidentally extinguishes, turn the control knob to the 0 position and wait at least 1 minute before re-igniting the burner.



If the burner has not lit within 15 seconds turn the control knob back to the 0 position and release it. Wait at least 1 minute and repeat the steps above to turn on the appliance.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

- Although the grill heats up quickly, it is recommended that a few minutes preheat be allowed. A 12 Volt cooling fan operates automatically above the grill cavity.
- It is normal for the flames on this burner to develop yellow tips as the grill heats up.

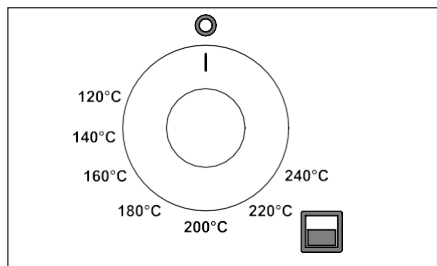
Turning off:

- Turn the control knob clockwise to the 0 position to turn off the grill.



Always make sure the control knob is in the 0 position when you have finished using the grill.

Use of the oven



For the exact location of the control knob, see:

Turning on:

- Open the door and push in the control knob.
- Continue pressing the knob and turn it anti-clockwise to the full rate position. (240°C, gas mark 7/9).
 - For spark ignition models: Push the ignition button.
 - For non-ignition models: Hold a lit match or gas match to the burner.
- Keep the control knob pressed for about 10-15 seconds and then release it.
- Adjust the required heat setting.
- Place the oven shelf in the required position and close the door.



Ignition must always be carried out with the oven door open.



If the burner accidentally extinguishes turn the control knob to the 0 position and wait at least 1 minute before

re-igniting the burner.



If the burner was not lit within 15 seconds turn the control knob back to the 0 position and release it. Wait at least 1 minute and repeat the steps above to turn on the appliance.

Although the oven heats up quickly, a 10-minute preheat is recommended. The oven should reach full temperature in about 15-20 minutes.

Turning off:

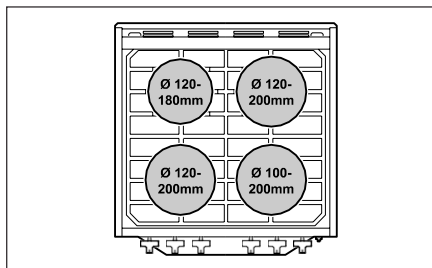
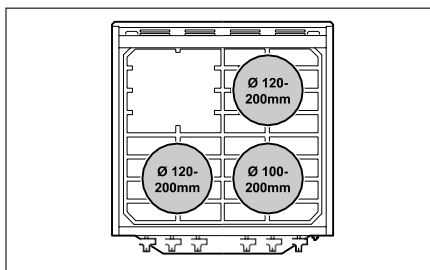
- Turn the control knob clockwise to the 0 position to turn off the burner.

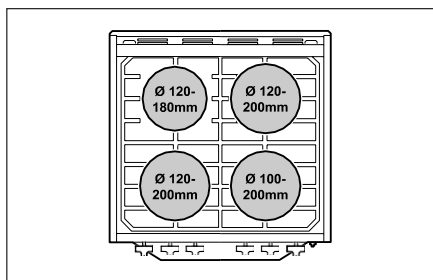


Always make sure the control knob is in the 0 position and the oven door is closed when you have finished using the oven.

Safe cooking

- Do not allow cooking vessels to overlap the edges of the appliance - use the correct sizes of pans and position them centrally over the burners.





- Ensure that there is at least a 10mm gap between the pans and the edges of the hob.
- Turn the pans so that the handles do not overhang the front of the appliance.
- Ensure that the flame of the gas burner heats the bottom of the pan, not the sides.
- The pans and trays supplied with this appliance are the maximum sizes. Do not use larger pans and trays. They may



restrict good circulation of heat, which may increase cooking times.

- Do not leave the appliance unattended when in use.
- Do not use the appliance while the vehicle is moving.
- Turn the control knob back to the 0 position after cooking.
- Keep the appliance clean and prevent accumulation of grease and food scraps.



Never cover slots or holes in the appliance and never cover a shelf with materials such as aluminium foil. That restricts the airflow and may cause carbon monoxide poisoning.




The food shelves and trays in the appliance are hot during and after use. Allow all parts to cool before touching them, as this can cause serious injury. Always use oven gloves when removing the shelves and trays.

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.

The table provides a guide to the approximate temperatures at each of the shelf positions with respect to the gas mark setting. Good use can be made of the temperature variation between the shelf positions, as 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.

Table 1: Temperature zones

Gas Mark				Dish
1/4 - 1/2	90°C	110°C	130°C	Meringues
1	110°C	130°C	150°C	Stewed fruit
2	120°C	140°C	160°C	Rich fruit cake, rice pudding
3	130°C	150°C	170°C	Baked custard, shortbread finger
4	140°C	160°C	185°C	Victoria sponge
5	155°C	180°C	200°C	Whisked sponges, ginger nuts
6	170°C	190°C	215°C	Short crust pastry
7	185°C	210°C	230°C	Bread, scones, flaky pastry
8	200°C	220°C	245°C	Puff pastry
9	200°C	220°C	245°C	Puff pastry



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.

Refrigerator

Operating the refrigerator

The main menu is divided into three lines:

Main menu	Detail menu
	Cooling capacity menu
	Operating mode menu
	Settings menu

Turn the control knob to select the desired detail menu.

Press the control knob to open the selected detail menu.

Turn the control knob to navigate through the detail menu.

Selected settings are displayed in blue.

Press the control knob to choose the selected setting.

Confirm the selection using

Controls

- Repeatedly press , until the LED indicates the desired operating mode.
- Repeatedly press , until the desired temperature level is set.

Setting the cooling capacity

Note: For ambient temperatures of +15°C to +25°C, select the average cooling capacity.

Set the cooling capacity:

Select the desired temperature level in the cooling capacity menu.

Repeatedly press until the desired temperature level is selected.

Using the refrigerator door

Risk of Injury

- The refrigerator or freezer compartment door can completely detach from the device if used incorrectly.
- Do not lean on the open refrigerator door.

Note: If the door is not secured correctly on the opposite side, carefully push on the top and bottom of the door on that side until it is secured in place.

Closing and securing the refrigerator door

- Press the door shut until you clearly hear it click at the top and bottom.
- The door is now closed and secured.

Notes on storing food

Health Hazard

- Please check whether the cooling capacity of the refrigerator is suitable for the food you wish to cool.
- Opening the door for long periods can cause significant increase of the temperature in the compartments of the refrigerator.
- Store raw meat and fish in suitable containers in the refrigerator, so that raw meat and fish is not in contact with or drip onto other food.
- Food may only be stored in its original packaging or in suitable containers.
- The freezer compartment is suitable for making ice cubes and for keeping frozen food. It is not suitable for freezing previously unfrozen food.
- If the refrigerator is exposed to a room temperature of below +10°C
- for an extended period of time, a uniform temperature cannot be guaranteed in the freezer compartment. This can lead to an increase of the freezer compartment temperature and the goods stored in it may defrost.

Note:

- The maximum weight per door shelf is 6kg (3kg for RML10.4 series models). The maximum weight for the entire door is 7.5kg.
- Store heavy objects such as bottles or cans in the refrigerator door, in the lower storage compartment or on the bottom shelf only.
- Do not keep carbonated drinks in the freezer compartment.

Defrosting the refrigerator

Note: Do not use mechanical tools or a hair dryer to remove ice or to loosen frozen items.

Note: Over time, frost builds up on the cooling fins inside the refrigerator. If this layer of frost is about 3mm thick, you should defrost the refrigerator.

Positioning the refrigerator door in the winter position

CAUTION: The winter position may not be used while driving.

Place the refrigerator door and the freezer compartment door into the winter position if you are not going to use the refrigerator for an extended period of time. This prevents mould from forming.

- Defrost the refrigerator
- Unscrew the hook near the securing mechanism all the way at the top and bottom of one side of the door.
- Press against the refrigerator door. The protruding pin snaps into the hook.


Open the door in winter mode as follows:

- Pull the door toward you.
- Push the protruding hooks at the top and bottom of the door back in.

Fault messages and signal tones

All faults are indicated with a warning symbol, a fault ID and a beep. The beeping lasts for 2 minutes and is repeated every 30 minutes until the error has been rectified.

If multiple faults occur, the display shows the last fault. The underlying faults are displayed after the last fault has been confirmed.

In the event of a fault, the LED warning symbol () in the display lights up continuously and the LEDs flash according to the fault.

Cleaning and maintenance

WARNING: Always disconnect the refrigerator from the energy supply before cleaning and servicing it.

Note: When cleaning, never use sharp cleaning agents or hard or pointed tools to remove layers of ice or to loosen objects which have frozen in place.

- Clean the refrigerator regularly when it gets dirty using a damp cloth.
- Make sure that no water drips into the seals. This can damage the electronics.
- Wipe the refrigerator dry with a cloth after cleaning.
- Check the condensate drain regularly.
Clean the condensate drain when necessary. If it is blocked, the condensate collects on the bottom of the refrigerator.
- Make sure that the ventilation grilles in the outer wall of the mobile home or caravan and the refrigerator roof ventilator are free from dust and pollutants. This ensures that the heat generated during operation can dissipate, the refrigerator is not damaged and the cooling capacity is not reduced.

Cleaning the gas burner

WARNING:

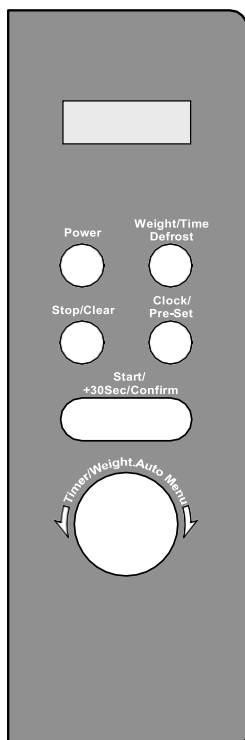
- **Allow the burner to cool down before cleaning it.**
- **Do not modify the gas equipment.**

Note:

- Dirt in the gas burner is indicated by poor ignition or deflagrations.
- The manufacturer also recommends cleaning the burner after it has not been used for an extended period and at least once a year.
- When using liquefied petroleum gas, the cleaning interval is reduced to half yearly or quarterly, depending on the level of dirt.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

MICROWAVE



MENU ACTION SCREEN Cooking time, power, auto and the clock time are displayed.

POWER Press to select the power level for microwave cooking.

WEIGHT/TIME DEFROST Press this button to input weight for defrosting.

CLOCK/PRE-SET Press this button to input weight for defrosting.

STOP/CLEAR Press to stop the cooking process.

TIMER/WEIGHT . AUTO MENU Rotate to select the cooking time and the auto menus.

START/+30SEC/CONFIRM Press this button to start the cooking process and confirm when programming.

DOOR OPEN Pull the handle to open the door.

Microwave cooking

- 1 Press the "POWER" button once and "P100" will display and flash.
- 2 Turn the "TIMER/WEIGHT" to select the microwave power. "P100", "P90", "P80", "P70", "P60", "P50", "P40", "P30", "P20", "P10" and "P00" will display in order.
- 3 Press "START/+30 SEC" to confirm.
- 4 Turn the "TIMER/WEIGHT" dial to adjust the cooking time. (The time setting should be between 0:05- 95:00).
- 5 Press "START/+30 SEC" to start the cooking process.

Press power button	Cooking power
P100	100%
P90	90%
P80	80%
P70	70%
P60	60%
P50	50%
P40	40%
P30	30%
P20	20%
P10	10%
P00	0%

To stop the cooking process at any time press the "STOP/CLEAR" button.

For further appliance information please refer to microwave user manual.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

BATTERY CHARGER

The battery charger for the caravan battery will automatically switch on when the caravan is connected to a mains supply. The battery charger will also provide a 12V supply to the caravan when a battery is not connected.

Please note that the battery charger fitted is designed to keep your battery charged and is not designed for charging up a flat battery.

SMOKE ALARM

Operation

Normal Condition

The red LED on the front should flash every 40 seconds to show that the alarm is active.

Lower Power Pack Condition

IMPORTANT: Your smoke alarm requires the power pack to have sufficient capacity of power to operate correctly.

Should your smoke alarm enter a low power pack condition, the unit will emit an audible 'chirp' once every 40 seconds. When this occurs, we recommend you replace the alarm immediately. Your smoke alarm will continue to warn of this low power pack for at least 7 days, however, failure to change the alarm after this time would mean your smoke alarm may have insufficient power to alert you in a real fire situation. When the alarm is removed from the base plate the power pack will automatically deactivate and the low power warning chirp should stop, allowing you to dispose of the alarm.

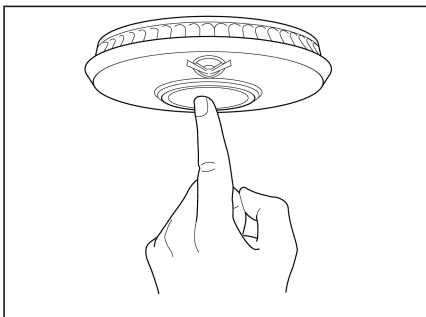
Low Battery Warning Silence

This feature can temporarily silence the low battery chirp for 8 hours which is particularly useful if the warning begins during the night. This feature may be repeated up to 10 times, but is not a substitute for replacing the smoke alarm.

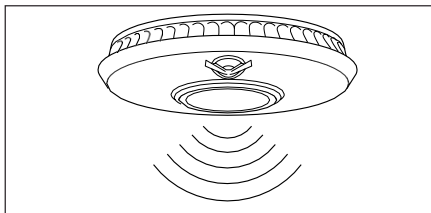
Alarm Test

The alarm must be properly attached to the base plate before it can be tested.

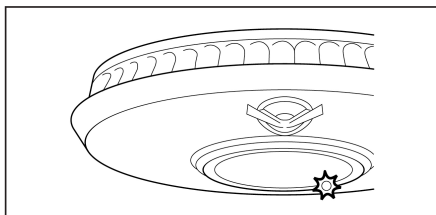
- Press the test button in the centre and release.



- The unit will give an audible alarm consisting of 2 cycles of 3 loud beeps, then stop automatically.



- The red LED on your alarm will flash rapidly during the audible signal.



Note: The test button accurately tests the alarm's smoke sensing circuit, there is no need to test your alarm with smoke. If your smoke alarm fails to give an audible test signal, please refer immediately to the trouble shooting guide at the end of this manual.

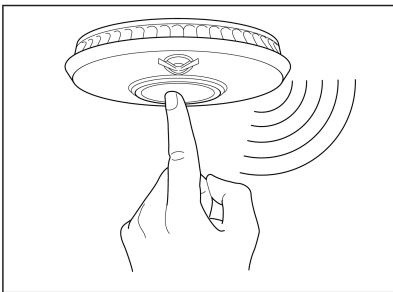
WARNING: You should test your smoke alarm every week.

ALARM SMART SILENCE™

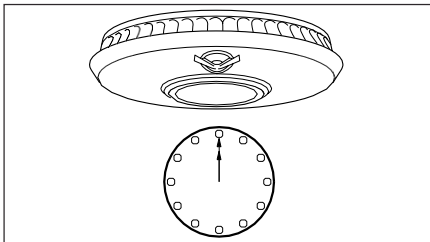
DANGER: If your smoke alarm emits the full alarm signal and you are not testing the unit, the smoke alarm is warning you of a potentially dangerous situation that requires your immediate attention. Only use the alarm silence function after making sure that there is no ongoing fire emergency situation. Do not block the vents on the alarm or disable the smoke alarm in any way, as this will remove your protection. Smoke alarms can sometimes react to cooking fumes or other non emergency situations. Your smoke alarm features "Smart Silence" technology. In the event of a known false alarm your smoke alarm can be temporarily silenced by pressing the central test button. Your alarm will automatically return to full sensitivity within 10 minutes.

Note: If the level of smoke reaching the alarm is very high, the alarm silence will be overridden and the alarm will continue to sound.

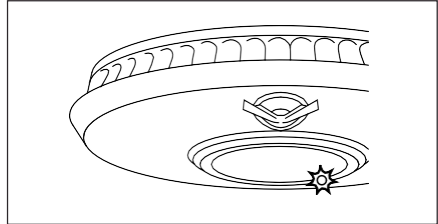
- Press and release the silence button, the alarm sound will shortly stop.



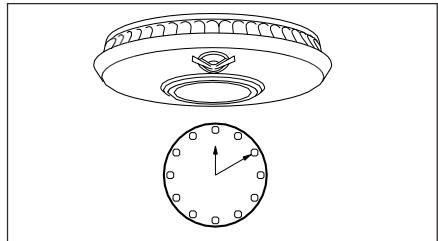
- Your alarm will silence and enter into a reduced sensitivity reset cycle for approximately 10 minutes.



During the reduced sensitivity reset cycle, the red LED on your alarm will continue to flash more rapidly than normal, approximately once every second.



- Your alarm will automatically return to full sensitivity on completion of the reset cycle and the red LED will revert to flashing once every 40 seconds.



DANGER: Never ignore any alarm. Ignoring the alarm may result in injury or death. If your smoke alarm activates and alarms and you are not absolutely certain of the source of the smoke, get everyone out of the caravan immediately.

LOW BATTERY WARNING SILENCE

Low battery warnings often start at night or when it maybe inconvenient to replace your alarm. You can silence the audible chirp for a period of 8 hours by pressing the test button. Your smoke alarm will still detect smoke during this time of low battery warning silence. However, it is recommended that you replace your alarm immediately and certainly within 7 days, as your alarm may then have insufficient power to warn you of a real fire situation after this time.

WARNING: Your smoke alarm cannot be silenced if the chirp is indicating a fault. In this instance, the unit should be replaced immediately to ensure protection in the event of a fire.

MAINTENANCE

Your smoke alarm has been designed to be as maintenance-free as possible, however there are several things you must do to keep it working properly.

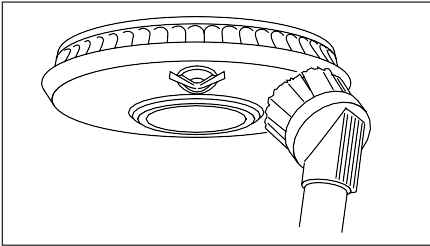
CAUTION: Your smoke alarm is a sealed electrical device and no attempt should be made to open the case. Attempting to open the case will invalidate your warranty.

Testing

Test your smoke alarm once every week see 'Alarm Test'. Any test failures should be reported to the Technical Support Team.

Cleaning

As a minimum your smoke alarm should be cleaned once every 3 months using your vacuum cleaner fitted with the soft brush attachment.



WARNING: Your smoke alarm may false alarm when it is being cleaned using a vacuum cleaner.

IMPORTANT: Do not use solvents or cleaners on your smoke alarm, as they may cause damage to the sensor or circuitry. The unit can be wiped with a slightly damp cloth.

CAUTION: Do not paint the smoke alarm as this may block the openings and prevent smoke from entering the sensor.

CARBON MONOXIDE ALARM

Carbon monoxide and how it can affect you and your family

Carbon monoxide is a dangerous poisonous gas that kills hundreds of people each year and injures many more. It is often referred to as the silent killer because it has no odour or taste and cannot be seen. Like oxygen, CO enters the body through the lungs during the normal breathing process. It competes with oxygen by replacing it in the red blood cells, thereby reducing the flow of oxygen to the heart, brain and other vital organs. In high concentrations, CO can kill in minutes.

Many cases of reported carbon monoxide poisoning indicate that while victims are aware they are not feeling well, they become disorientated and unable to save themselves by either exiting the building or calling for assistance. Exposure during sleep is particularly dangerous because the victim does not wake up.

Symptoms of CO poisoning

The following symptoms may be related to CO poisoning which all household members should be made aware of:

- Mild Exposure: Slight headache, nausea, vomiting, fatigue (often described as 'flu-like' symptoms).
- Medium Exposure: Severe throbbing headache, drowsiness, confusion, fast heart rate.
- Extreme Exposure: Unconsciousness, convulsions, cardiorespiratory failure, death.

Your CO detector monitors the level of CO as parts per million (ppm) in the atmosphere surrounding the detector.

35ppm The maximum allowable concentration for continuous exposure for healthy adults in any 8 hour period, as recommended by the Occupational Safety and Health Administration (OSHA).

200ppm Slight headache, fatigue, dizziness, nausea after 2-3 hours.

400ppm Frontal headaches within 1-2 hours, life threatening after 3 hours.

800ppm Dizziness, nausea and convulsions within 45 minutes.
Unconsciousness within 2 hours.
Death within 2-3 hours.

Should you suspect CO may be affecting you or your family, open the doors and windows of your caravan to ventilate, turn off your appliances and evacuate the premises. At this time the authorities should be contacted to locate the source of the carbon monoxide before re-entering the caravan. Medical attention should be sought for anyone suffering the effects of CO poisoning.

Common sources of CO

- Oil and gas boilers
- Portable generators
- Oil or solid fuel cookers
- Barbecues
- Clogged chimneys
- Wood or gas fireplaces
- Cigarette smoke
- Gas appliances
- Any fossil fuel-burning appliance

WARNING: This carbon monoxide detector is not a combustible gas detector, nor a smoke detector. Please install the proper detectors to detect combustible gases, or smoke.

This CO detector should not be seen as a substitute for the proper installation, use and maintenance of fuel-burning appliances (including appropriate ventilation and exhaust systems), nor the sweeping of chimneys.

WARNING: Variables relating to your fuel-burning appliances can change at any point eg. the flue or chimney could suddenly become blocked or damaged, appliances may stop running correctly or circumstances in neighbouring properties may change resulting in the presence of carbon monoxide. For this and other reasons do not use this carbon monoxide detector on an intermittent basis, or as a portable detector or an intermittent basis, or as a portable detector for trying to trace one source of the spillage of combustion products from fuel-burning appliances or from chimneys.

Do not:

- IGNORE ANY WARNING FROM YOUR CO DETECTOR!
- Burn charcoal inside your home, caravan, tent or cabin.
- Install, convert or service fuel-burning appliances without proper knowledge, skill and expertise.
- Use a gas cooker for heating a room.
- Operate unvented gas burning appliances using paraffin or natural gas in closed rooms.
- Operate petrol-powered engines indoors or in confined areas.
- Barbecue indoors, or in an attached garage.
- Ignore a safety device when it shuts an appliance off.

Always:

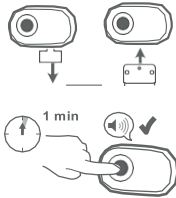
- Buy appliances accepted by a recognised testing laboratory.
- Install appliances according to the manufacturer's instructions.
- Have appliance installations carried out by professionals (for gas appliances engineers should be registered on the Gas Safe register).
- Have your appliances checked regularly by a qualified service engineer.
- Have your chimneys and flues cleaned professionally every year.
- Make regular visual inspections of all fuel-burning appliances.
- Open windows when a fireplace or oil/solid fuel cooker is in use.
- Only install CO detectors that meet the requirements of EN 50291-1:2018 and EN 50291-2:2019 in your home.
- Be aware of CO poisoning symptoms.
- Educate yourself and your family on the sources and symptoms of CO poisoning and how to use your carbon monoxide detector.

ALARM ACTIVATION

To activate your CO alarm, pull the disabling tab out of the device.

Wait up to 1 minute for the green LED to flash to confirm the device is active.

Press the Test/⏏ button to test the alarm. The alarm will sound. (The alarm will not sound before the 1 minute activation period is complete).



ALARM SILENCE

WARNING: If the cause of an alarm is unknown, ventilate and evacuate your property before using this feature.

Press the Test/⏏ button.

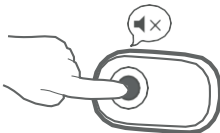
The sounder will stop and enter into Silence mode for 5 minutes.

Note: The alarm will not silence if more than 150ppm has been detected.

Silence mode can only be activated once (until CO returns to negligible levels).

Once the Silence mode is enabled, if the CO level rises above 150ppm the device will exit Silence mode and continue to sound.

After 5 minutes if the CO level is still high, the device will continue to sound.



Understanding the products indicators

The higher the concentration of carbon monoxide detected by the detector, the quicker it will respond. When sufficient carbon monoxide is detected a loud audible signal (85 dB at 3m) will be emitted and the Alarm LED will flash red once every second.

The alarm will sound:

- Between 60 and 90 minutes when exposed to 50ppm of CO.
- Between 10 and 40 minutes when exposed to 100ppm of CO.
- Within 3 minutes when exposed to 300ppm or more of CO.

ALARM IN ABSENCE

When a CO alarm has occurred in your absence, your device will notify you so that you can take appropriate action at the earliest opportunity.

If the device is not silenced during an alarm, it will continue to sound until the CO level has reduced to below 50ppm.

After which, the device will flash the red warning light twice every 20 seconds to indicate that dangerous CO levels have been detected in your absence.

The red warning light will continue to flash for 7 days if the Test/⏏ button is not used to cancel it.

Red flash: ☀ --> ☀

MAINTENANCE

Test the alarm every month. Press the Test button. The alarm will sound.

If the alarm does not sound. Contact Technical Support.

Note: The above method fully tests all elements of the alarm. Additional, but not essential testing may be conducted using the Sense-CO Test mode and CO gas.

To ensure your alarm is tested correctly using low concentrations of test CO gas, please follow these instructions.

1. To activate Sense CO testing, triple press your alarm test button. **Please note:** The request to enter Sense CO mode will timeout after two minutes if no further action is taken.
2. Once Sense CO is activated, the CO acquisition task is performed constantly. The yellow 'ventilate' LED light will flash once per second and the unit will provide indications if the CO level is >30ppm during the following two minutes.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

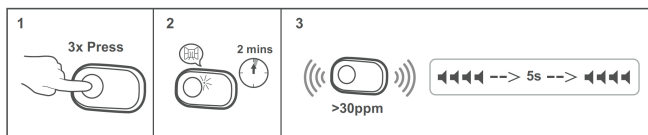
3. If levels of CO are detected, the alarm will sound four loud beeps, with a five second gap between each beep, before another four loud beeps.

As caravans have an increased risk of carbon monoxide ingress through air vents due to the nearby presence of other vehicles, engines, generators or barbecues, this method of testing is highly recommended for the industry.

Please do not use any other test method than what is detailed in the product manual.

Do not tamper with the alarm as this could cause electric shock or malfunction.

CAUTION: Sensor testing should only be performed by a responsible adult. This test should only be performed annually.



Vacuum your alarm every 3 months.

Do not use cleaners or solvents.

Do not paint the alarm.

Replace the alarm every 10 years.

The replacement date can be found next to the 'REPLACE BY' marking on the alarm.

SYSTEM STATUS INDICATORS

Your CO alarm constantly checks the accuracy of its sensor and circuitry. All alarms must indicate when there is a fault or if the battery power is low (identified by the ! icon).

If any of the settings are found to be incorrect or if the batteries become low, the device will sound an audible chirp and display an amber flash pattern for up to 30 days.

IMPORTANT: This does not mean that the alarm has detected carbon monoxide. If there is a fault, your CO alarm will display the following fault indication patterns.

	Audible pattern	Amber LED/LCD	Action required
Low battery	1 beep/min	1 amber flash/min	Replace the batteries
Fault	2 rapid beeps/min	2 rapid amber flashes/min	May not detect CO - replace immediately
End of life	3 rapid beeps/min	3 rapid amber flashes/min	May not detect CO -replace immediately

If your alarm is within warranty, contact Technical Support.

Your CO alarm must be replaced immediately if there is a fault or the device indicates End of Life. An alarm with a fault or signalling End of Life may not detect a CO leak.

SLEEP EASY™ SILENCE FEATURE

If a low battery warning 'chirp' occurs at night, it may be inconvenient to replace the batteries or alarm. You can silence the 'chirp' by pressing the Test/!x button. The alarm will silence for 8 hours and the amber LED will continue to flash.

Note: You can silence your device a maximum of 10 times.

If your alarm is an FA3313 and is signalling low batteries, replace the batteries as soon as possible.

Once the batteries have been replaced, the Sleep Easy feature will be disabled for 30 days.

Note: During Sleep Easy mode the unit still detects CO and will alert you to any new faults.



THETFORD C-260 CASSETTE TOILETRANGE

Introduction

The Thetford Cassette Toilet is a high quality product. The toilet forms an integral part of your caravan bathroom, thanks to its functional design which combines modern styling and ease of use. The C-260 Cassette Toilet is manufactured from high quality synthetic materials which makes it a durable, user and maintenance friendly toilet.

The toilet is made up of two parts: a permanently fixed part and a Waste Holding Tank that is accessible from the outside. The removable Waste Holding Tank is located under the toilet bowl and can be removed via a door on the outside of the caravan. The Thetford Cassette Toilet is the solution to the sanitary problem in your caravan!

The operating instructions cover Thetford Cassette Toilet models C-260S, C-260CS (models connected to the vehicle's central water tank) and C-260CWE (model with its own flush-water tank). There are differences in the use of these models. Please ensure that you follow the instructions that apply to your toilet model.

Preparing for use (standard)

1. Open the access door on the outside of your caravan.
2. Remove the Waste Holding Tank by pulling the safety catch (which holds the tank in place) upwards.
3. Pull the Waste Holding Tank outward to the stop. Tip it slightly and take the tank fully out.
4. Place the tank upright and turn the rotating emptying spout upwards. The emptying spout ensures that the tank can be easily and hygienically emptied.
5. Remove the cap, with the measuring cup inside, from the emptying spout and pour the correct dosage of Thetford toilet fluid (see product label) into the holding tank. This avoids unpleasant smells and keeps the inside of the tank clean. Next add approximately 2 litres of water - enough to ensure that the bottom of the Waste

Holding Tank is covered. For more information on Thetford toilet fluids, see last page of this manual. Screw the cap back onto the emptying spout and turn back to its original position.

Note: The Emptying Spout Measuring Cap is supplied in the same packaging as this manual.

WARNING: Never add toilet fluid directly via the blade or the toilet bowl as this could damage the lip seal of the Waste Holding Tank. Always pour the fluids via the emptying spout.

1. Slide the Waste Holding Tank back into its original position via the access door. Make sure that it is secured with the safety catch. Close the access door and lock it. Your Thetford toilet is now ready to use.

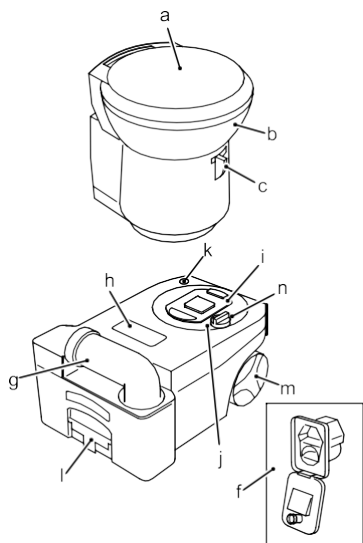
WARNING: Never use force if you cannot get the tank back into place easily. This may cause serious damage. If blockage occurs, always check if the blade handle is in the correct (closed) position.

2. For toilets with own Flush-Water Tank: Open the water filling door and fill the flush-water tank with the correct dosage of Aqua Rinse. This Thetford toilet fluid keeps the flush water fresh and improves the flushing. Next, fill up the flush-water tank with clean water (approximately 8 litres) using a ferry can or hose. Your toilet is now ready to use.

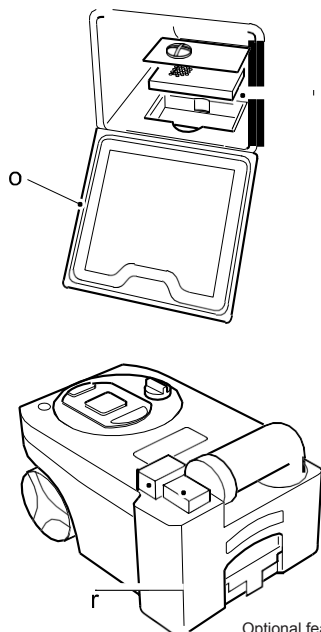
Preparing for use with Optional Features

3. Automatic Ventilator: Open the access door on the outside of your caravan and remove the Waste Holding Tank (as described above).
4. Remove the filter housing cover and if no filter is present, place a new filter into the filter housing. Peel off the sticker lids on the filter. Place back the cover of the filter housing.

Standard

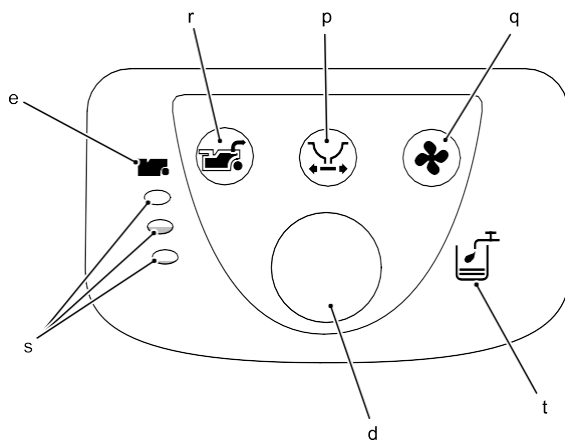


Optional features



Note:
Optional features can be
bought from Thetford dealerships.

Control panel (with optional features)



PARTS

- a) Removable Seat and Lid
- b) Swivelling Toilet Bowl
- c) Blade Handle
- d) Flush Button
- e) Waste Holding Tank Level Indicator
- f) Water Filling Door (only if toilet has own flush-water tank)
- g) Rotating Emptying Spout
- h) Automatic Pressure Release Vent
- i) Sliding Cover
- j) Removable Mechanism
- k) Vent Plunger
- l) Pull-out Handle
- m) Wheels
- n) Blade Opener
- o) Access Door to Waste Holding Tank

Optional Features

- p) Electric Blade
- q) Automatic Ventilator
- r) Waste Pump-Out System
- s) Waste Holding Tank Multi-Level Indicator
- t) Flush-Water Tank Level Indicator (only if toilet has its own flush-water tank)

Using the toilet (standard)

10. Turn the bowl to the desired position with the lid closed and using both hands.
11. To activate the control panel, press the flush-button once. The control panel display will stay activated for approximately 5 minutes. Run some water into the bowl by pressing the flush button again briefly.
12. The toilet may be used with the blade open or closed. To open the blade, slide the blade handle under the toilet bowl sideways. After use, open the blade (if still closed) and flush the toilet by pressing the flush button for several seconds (if necessary re-activate the control panel). Close the blade after use.

WARNING: If your toilet has its own flush-water tank, please make sure that you do not travel with a flush-water tank that is too full. Do not travel with water in the toilet bowl. Failure to adhere to this notice may result in water damage to your caravan or motor home.

Using the toilet with Optional Features

13. Electric Blade: Push the electric blade button on the control display to electrically open or close the blade. In the case of failure, you can manually open or close the blade by sliding the small handle under the toilet bowl sideways.
14. Automatic Ventilator: The ventilator automatically starts when the control panel is activated (by pressing the flush button) and will automatically shut off after approximately 5 minutes. The Automatic Ventilator Indicator will flash until automatic shut-off occurs. If you want to stop the ventilator, press the Automatic Ventilator button. If you want to re-start the ventilator, press the button again (the LED will start flashing again).
15. Flush Water Tank Level Indicator (only for toilets with own flush-water tank): When the Flush Water Tank Level Indicator lights up, refill the flush-water tank, as only about 1.5 litres of water is left in the tank, which is sufficient for approximately 2 flushes.

Emptying

The Waste Holding Tank has a capacity of 18 litres and requires emptying when the red light (LED) on the toilet control display lights up, when the Waste Holding Tank only has capacity for approximately 2 more litres, which is no more than two to three further uses.

Make sure that the blade is closed. Open the access door located outside the vehicle, pull the safety catch upwards and remove the Waste Holding Tank.

6. Place the Waste Holding Tank in an upright position (Pull-Out Handle at the top, Wheels at the bottom). Slide the handle sideways - to the front of the tank - until it snaps out of its locked position.
7. Pull the handle up and wheel the Waste Holding Tank to an authorised waste disposal point.
8. Push the handle back into its locked position. Turn the emptying spout upwards and remove the cap from the spout. Hold the Waste Holding Tank in such a way that during emptying you can operate the vent plunger with your thumb. To empty the tank without splashing, depress the vent plunger while emptying the tank. After emptying, rinse the tank and blade thoroughly with water.

WARNING: Do not seriously shake the tank or use high pressure water cleaners. This may cause damage to the tank's interior.

Note: The vent plunger should only be depressed once the emptying spout is pointing downwards. Prepare the toilet for re-use if required. Slide the Waste Holding Tank into the toilet and close the access door.

Emptying with Optional Features

9. Waste Holding Tank Multi-Level Indicator: The lower lamp indicates that the Waste Holding Tank is almost empty; the middle lamp indicates that it is more than half full; when the upper lamp lights up, the tank needs emptying as it can only take 2 - 3 further uses.

- **Note:** The Waste Holding Tank Level Indicator will flash when the holding tank is not present. In this case the toilet will not flush.

16. **Waste Pump-Out System:** When activating the control panel this feature automatically lights up. When the Waste Holding Tank Level Indicator illuminates, press the Waste Pump-Out button to pump out the waste from the holding tank into the vehicle's waste tank. The button will flash while the waste is being pumped and will stop automatically (after approximately 5 minutes) when all waste has been transferred. If the vehicle's waste tank is full, the Waste Pump-Out light will flash rapidly and no pump-out will be possible until the central tank is emptied. (Check the level of the vehicle's waste tank on the vehicle's central console). After the Waste Holding Tank has been emptied, there will be approximately 1.5 litres of waste left in the tank. This is normal. Add 2 litres of water and a correct dosage of Thetford toilet fluids to the Waste Holding Tank.

CAUTION: It is vital that the correct amount of toilet fluid is added to ensure the proper breakdown of the waste in the holding tank. Only use the system when the tank is full. Using the system too often on an empty tank can cause damage to the pump, which could cause the system to fail.

Cleaning and Maintenance

The toilet should be cleaned and maintained regularly, depending on the amount of use. To clean Thetford toilets, we advise using water and Thetford Bathroom Cleaner.

Note: Never use bleach, vinegar or other powerful household cleaners that contain these substances. These may cause permanent damage to the seals and other toilet components.

Toilet Bowl

- Squirt Thetford Bathroom Cleaner into the toilet bowl.
- Flush the toilet bowl with water and wipe down the rest of the toilet with a damp cloth.

Clean seat and lid The seat and lid can easily be removed: Lift the seat and lid assembly and pull the round pins (inside the assembly) outwards from the pin holes. After cleaning, replace the seat and lid by positioning the round pins in front of the pin holes and push the lid and seat downwards.

- To keep your flush water fresh and to prevent deposits from forming in your toilet bowl, add a correct dosage of AquaRinse in your flush water tank, if present, on your toilet.

Tip! For a really shining toilet, dry with a soft dry cloth after cleaning.

Waste Holding Tank

To keep your Waste Holding Tank fresh and clean, Thetford has developed a number of different toilet fluids. Thetford toilet fluids suppress smells, reduce formation of gas, promote breakdown of toilet waste and increase the life span of a mobile toilet. We advise a thorough cleaning of the Waste Holding Tank once each season. Next to using Thetford's Cassette Tank Cleaner, the powerful cleaning agent for the periodical cleaning of the Waste Holding Tank of your toilet, we suggest the following: -

- Remove the removable mechanism from the Waste Holding Tank by turning it anti-clockwise and rinse it under a tap.
- Remove the cover plate from the Automatic Pressure Release Vent by prising it up using a small screwdriver. Use one hand to push the Automatic Pressure Release Vent open while holding the float of the Automatic Pressure Release Vent on the inside of the tank with the other hand. Push the float upwards, turn it 180 degrees and remove it from below. Remove the rubber seal underneath the float. Rinse the float and rubber seal under a tap. Replace the rubber seal and float for the Automatic Pressure Release Vent using the same method in reverse.

The rubber seals in the toilet (the lip seal, the mechanism seal, the automatic pressure release vent seal and the cap seal) should

be regularly cleaned with water and treated with Thetford High Grade Seal Lubricant. This will ensure that the seals remain flexible and in good condition. If the toilet is not to be used for any length of time, it is important to treat the seals with Thetford High Grade Seal Lubricant after cleaning.

Note: Never use Vaseline or any vegetable oil except olive oil. These may cause leakage or malfunction. The lip seal is a part of the toilet that is subject to wear. Depending upon the extent and manner of use, the seals will become less effective and will need replacing periodically.

Cleaning and Maintenance for Optional Features

- **Automatic Ventilation:** The filter of the Automatic Ventilation needs to be renewed periodically. After approximately 4 full weeks of use, the filter loses its absorption power.
- **Pump-Out Waste System:** To ensure optimal functionality of the Pump-Out Waste System, periodical maintenance of the tube and pump is recommended. After emptying the Waste Holding Tank completely, fill it with clean water and empty it again. This will clean the pump and the hose. Do this once every 3 weeks when on holiday. This should ensure proper operation of the system.

Winter operation

You can use your Thetford Cassette Toilet as normal in cold weather as long as the toilet is situated in a heated location. If there is a risk of freezing we advise that the toilet is drained by following the instructions under 'Storage'. For environmental reasons the use of antifreeze, such as that used in car radiators, is not recommended.

Storage

It is important that you follow the instructions below if you do not expect to use your Thetford toilet for a long (winter) period.

- Activate the Control Panel by pressing the flush button. Open the blade and press the flush button until water stops flowing into the bowl. Close the blade.

Open the access door on the outside of your caravan or camper and empty the Waste Holding Tank at an authorised waste dump. Follow the instructions for cleaning and maintenance. To allow the Waste Holding Tank to dry, do not place the cap back on the emptying spout of the tank.

5. If the toilet has its own flush-water tank, place a sufficiently large bowl under the drain tube to catch the remaining water from the flush-water tank and remove the drain plug. When no more water exits, put the drain plug on the drain tube, put it back in its original position and close the access door. If the toilet is connected to the vehicle's water tank, please follow your vehicle's instructions for draining the central water system. If your toilet is optionally featured with a Waste Pump-Out System, take out the Waste Holding Tank and completely clean it (see Cleaning and Maintenance). After cleaning, fill it with water, put it back and empty it via the waste pump-out system. Repeat this twice.

Toilet unit malfunctions

Contact your dealer or a Thetford Service Centre.

We advise draining the fresh water tank prior to travelling. Antifreeze should not be required if the motor home is heated. If you do wish to use antifreeze, brands containing the following properties may be used in the fresh water tank:

- Ethylene glycol
- Mono-Ethylene glycol
- Propane-diol
- Glycerol
- Ethane-diol
- Glycol

Never use alcohol based antifreeze, i.e. Methanol, Ethanol, and Iso-propanol.

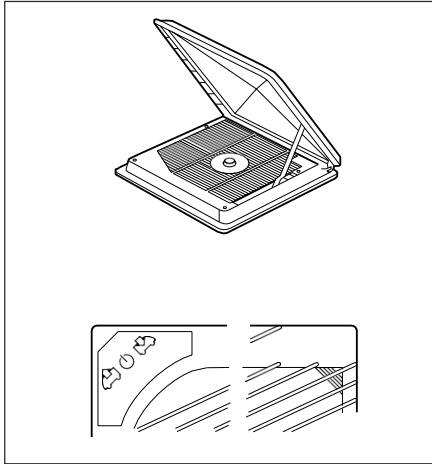
HOW TO USE YOUR CARAVAN'S EQUIPMENT



ROOFLIGHTS

Your caravan is fitted with at least one type of the following roof lights.

The Omivent (12v) Rooflight (Where Fitted)



The Omivent is a double-glazed roof light constructed from a synthetic ultra-violet screened material. Its side-operating mechanism allows a completely free central opening with built-in fixed ventilation when closed. It operates as an extractor fan and airintake fan.

Please note: Do not change the direction of the fan unless it has been switched off 'O' position and the blades have stopped rotating.

The Heki 2 Rooflight (Where fitted)

To open to the tilted position:

- (i) Press the knob in the toggle catches on either side of the rooflight and turn through approx. 90°.
- (ii) Grasp the metal bar in the middle, snap it out of its holder, swivel down and press the rooflight upwards. (The rooflight is held by the two gas springs after approx. 150mm).
- (iii) Swivel the metal bar towards the rooflight and snap into its holder.
- (iv) To close the rooflight, proceed with steps (i-iii) in reverse order.

To open in the intermediate position:

- (i) Open the toggle catches on either side of the rooflight.
- (ii) Grasp the metal bar in the middle; snap it out of its holder, swivel down and press the rooflight outwards. (Rooflight is opened automatically after approx. 150mm by the two gas springs.)
- (iii) Open both fasteners and swivel the metalstrap toward the intermediate position and pull the rooflight down until the metalstrap is stopped by the fasteners.
- (iv) To close, proceed with steps (i-iii) in reverse order.

To open in the ventilation position:

- (i) Open the toggle catches on either side of the rooflight.
- (ii) Using both hands on the two toggle catches, press the rooflight up about 2cm and fasten the toggle catches in the corresponding setting.
- (iii) To close, proceed with steps (i-ii) in reverse order.

Closing the blinds:

- (i) Take hold of the end rod (without rocker) in the recessed grip and engage in the opposite end rod (with rocker).
- (ii) Select the required position (blackout/flyscreen) by moving both joined end rods together.

CAUTION: In extremely bright sunshine, the blackout blind must only be closed two-thirds, and the rooflight must be set in the continuous airing position.

Opening the Blinds:

- (i) Move blind (end rod with rocker) right to the outside.
- (ii) Hold the recessed grip with one hand; with the other hand, press the rocker and move the blind back (do not let it recoil).

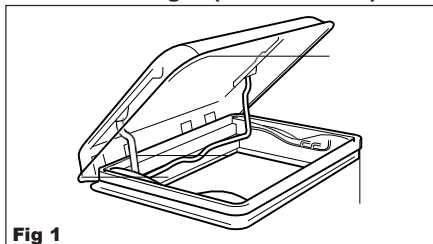
CAUTION

- Do not stand on the acrylic rooflight.

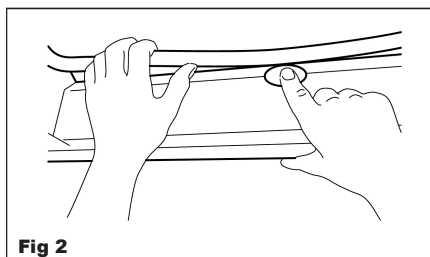
HOW TO USE YOUR CARAVAN'S EQUIPMENT

- Close HEKI 2 completely before moving off.
- Do not leave your caravan when HEKI 2 is open.
- Please consult your supplying dealer if you have any problems or defects.
- Remove any snow/ice or dirt before opening the roof.
- Do not open when it rains or when there is a strong wind.

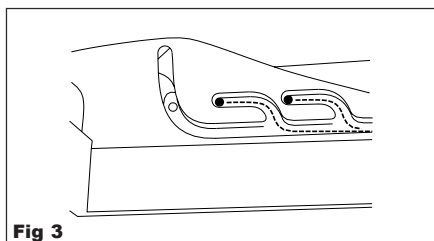
Midi Heki Rooflight (Where Fitted)



- (i) To open, push the large central button (Fig 2).

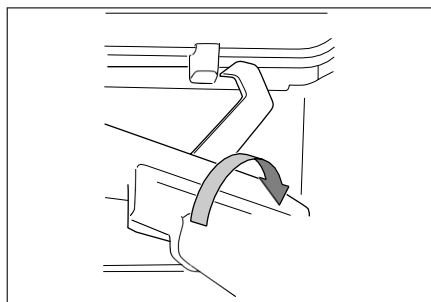


- (ii) Whilst depressed, slide the bar to the desired position and locate into the stops provided (Fig 3).



MPK Rooflight (Where Fitted)

Operation



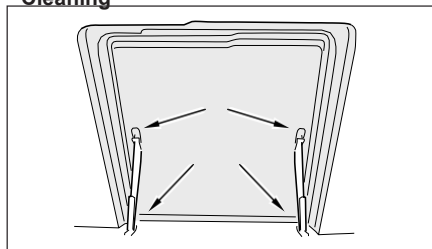
To open the rooflight, both pleated blinds must be open.

Grip the crossbar in the middle and turn it towards the opening side. Now the rooflight can be opened by pushing the crossbar. As soon as you release the crossbar, the opening mechanism snaps into this position.

To close the rooflight, turn it again and push it back in the opposite direction. When the end position is reached, the rooflight is locked automatically.

- Keep the pleated blinds open when driving to avoid driving noise and damage from the airstream.
- To avoid heat accumulation do not close blind completely during the day. Open both pleats when not using the vehicle.

Cleaning



For easier cleaning, the dome can be removed from the inner frame by releasing the four plastic split pins.

Do not loosen any screws that are used to fasten the dome or the opening mechanism.

Use only clear water and a soft sponge.

Solvents may attack the plastic and make it brittle.

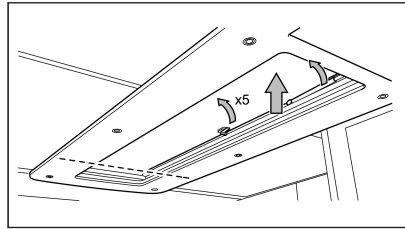
After cleaning, maintain the sliding surfaces with a thin layer of Vaseline or WD40. This makes the extension mechanism glide more easily. The rubber seals can be maintained with talcum powder.

Pay attention that the pins positively click into the locked position when re-installing the dome. The lever arm pins should be re-installed with the flat side towards the dome.

Clean the pleated blinds with a soft brush, dry cloth or feather duster.

We strongly advise against wet cleaning, as this can damage the insect screen and blackout pleated blind.

Stargazer Rooflight (Where fitted)



- (i) To open, first release all the plastic catches holding the rooflight in the closed position.
- (ii) Then push the rooflight up as indicated in the illustration, note the rooflight is hinged at the location of the dashed line.
- (iii) The rooflight will remain open on differing angles as it operates on a ratchet system.
- (iv) In order to close the rooflight push the rooflight up to its highest point and release it back down to the closed position.
- (v) Ensure the rooflight is closed and secured by the plastic catches before travelling.

WINDOWS

Your caravan will be fitted with Polyplasticframed windows.

Polyplastic Window Opening

- (i) In order to open the Polyplastic window it is only necessary to move the catch upwards and release the catch from the backing plate.
- (ii) The Polyplastic window should remain in the open position once opened, however if it does not then tighten the friction control on the window stays to increase the holding force.
- (iii) The Polyplastic window is also fitted with a night ventilation position where the catch is set to the centre position on the backing plate; in this position it may be possible for rain to enter the caravan in adverse conditions.

BLINDS & FLYSCREENS

Blinds

- (i) Pull blind down by its centre catch. Do not pull down by one side of the blind. This will inevitably lead to problems.
- (ii) Do not allow blinds to spring back freely. Always control them by hand.

Flyscreens

- (i) To operate the flyscreen, either pull the screen fully down, fully up or across, dependant on type of window fitted, and clip into place on the blind/frame.
- (ii) To release, unclip from the blind/frame. If a cross bar is fitted, gently pull the crossbar downwards towards you and allow the tension of the spring to roll up the flyscreen.
- (iii) Where a crossbar is not fitted, disconnect from the blind catch and release gently.
- (iv) It is recommended that blinds are not in the closed position whilst the caravan is moving.

Door Flyscreen

The exterior door flyscreen can be opened or closed from inside or outside the caravan and does not restrict door openings. When opening or closing the door flyscreen use the finger grip provided.

SHOWER

Using your Caravan Shower

To safely enjoy showering in your new caravan, the following guidelines should be used.

- Advise others that you are planning to have a shower and that they should not use other taps whilst you are showering.
- Ensure there is a sufficient supply of coldwater available.
- Divert the shower head or move to the side, turn on the shower, carefully test the temperature with your hand and regulate the temperature as necessary before standing underneath the shower.
- Supervise closely the young, elderly and those with reduced mentally or sensory impairment.

CAUTION: Water may be very hot.

TAPS

Your new caravan will be fitted with a domestic style mixer taps.

WARNING: The water temperature could be very high so do not lift the lever with the tap turned to the full left position.

CAUTION: For winter storage and to prevent frost damage the tap swivel must be left in the centre up position.

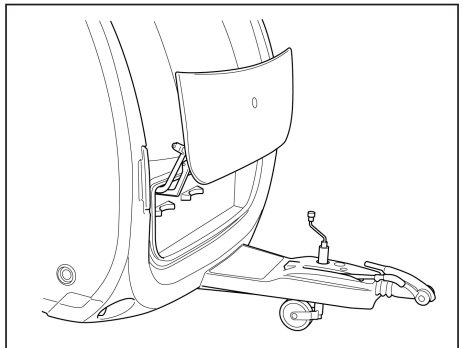
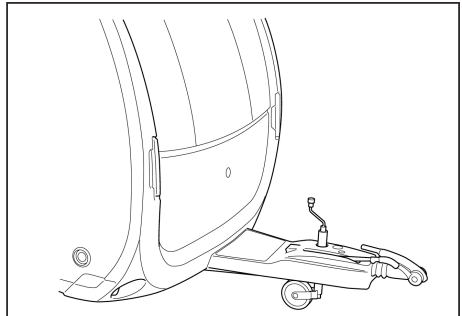
GAS LOCKER DOOR (PIVOTING DOOR)

Models are fitted with a supported door.

Please Note: It is important when raising your pivoting gas locker door that you do not push the door past the vertical position as this could damage the hinges. Also care should be taken when leaving the door in the open position to ensure that any wind cannot catch the door and push it open beyond the vertical position.

GAS LOCKER DOOR (WHIRLWIND, AVANTE APEX, CRUSADER, BUCCANEER)

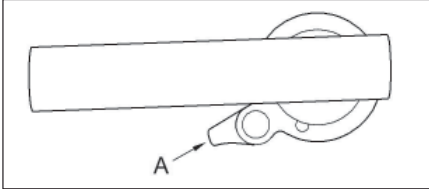
Some models are fitted with pantograph hinges, once the central button has been unlocked with the key it can be pushed and this will release the door. The door will then move toward you slightly and rise on gas struts, keeping the door vertical at all times. To close, the door must be pushed down and then toward the opening until the latches engage.



INTERNAL DOORS

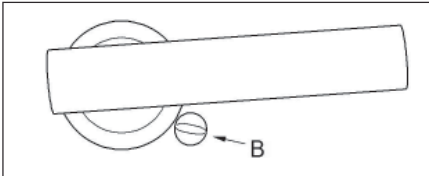
Toilet/Shower Room Doors

Operation from within the showerroom



To lock the door, push the small lever down (identified in the drawing as A) then to unlock, push this lever back to the original position.

Operation from outside the shower room

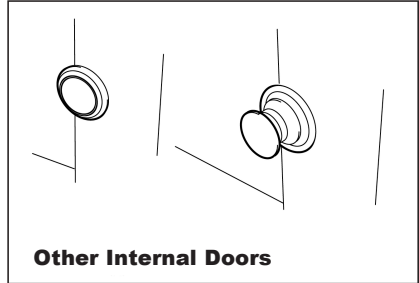


To open and close the door, push the lever down.

If the door is locked and needs to be opened, it can be opened by inserting a coin into the lower slot (identified in the drawing B) and turning the slot.

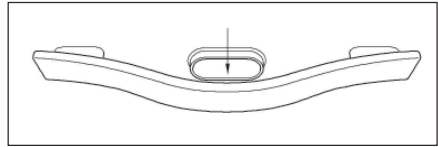
OTHER INTERNAL DOORS

Other internal doors such as the wardrobe and table storage locker are fitted with a 2-position button lock. Push the button to lock the door and the button should remain flush with the door. Push the button again to release and the button should then protrude from the door surface.



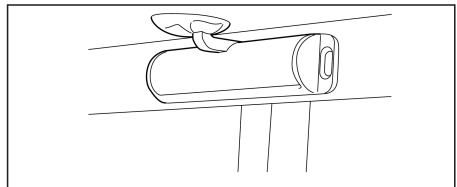
Other Internal Doors

Paddle Latch (Where Fitted)



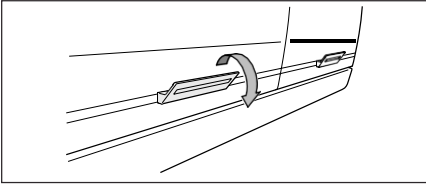
To open the locker, push the paddle downwards and pull the handle towards you.

Concealed Latch (Where Fitted)



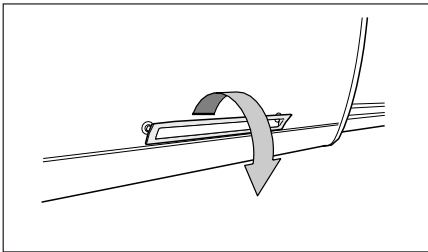
To open the locker, press the latch and pull the door towards you.

HIGH LEVEL LOCKER (CRUSADER)



To open the locker, push the handle downwards.

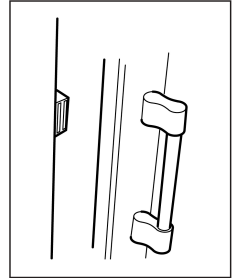
HIGH LEVEL LOCKER (BUCCANEER)



To open the locker, push the handle downwards.

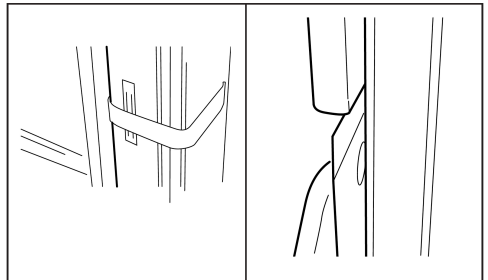
MAGNETIC CATCHES (WHERE FITTED)

Magnetic catches work on contact with the metal plate on the rear of the door. Simply close the door until the magnet engages and holds the metal plate. Pulling the door towards you with amoderate force will be sufficient to disengage the magnetic catch and open the door.



ROOM DIVIDER (WHERE FITTED)

The room divider should be held in place during transit by the use of the strap with thestud fastening. When stationary, the room divider can be held shut by fitting the retainercatch into the fitted keep.



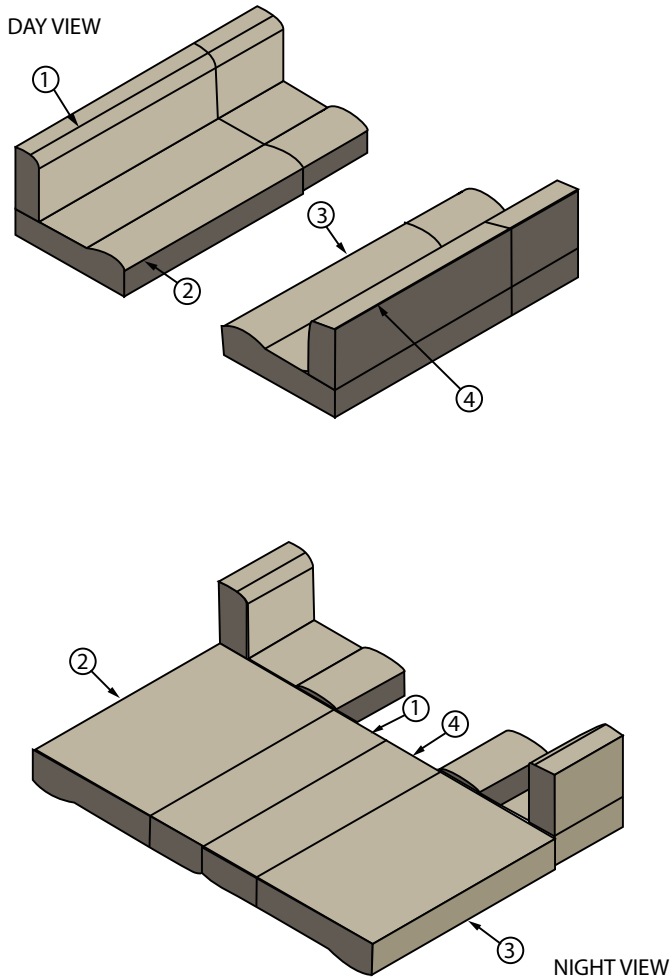
HOW TO USE YOUR CARAVAN'S EQUIPMENT

BED MAKE-UP (XPLORE)

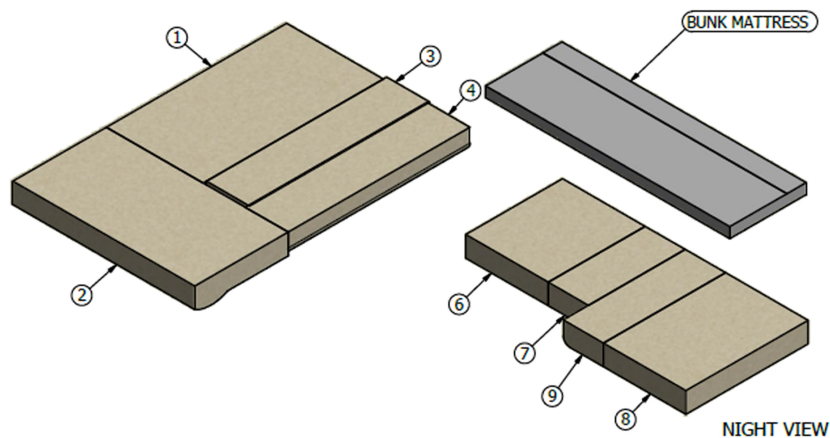
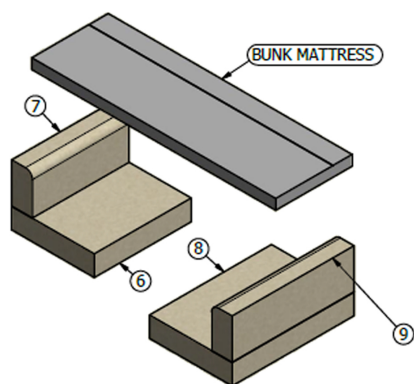
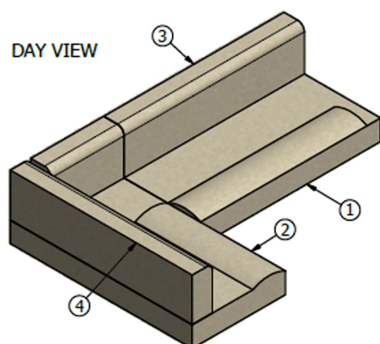
Parallel Lounge

The two single beds can be easily converted into a double bed by pulling out the bed slats, stored beneath the chest of drawers or stored in the bed slat box at the front/end of the caravan. Arrange seat cushions appropriately.

Day and Night Bed Makeup



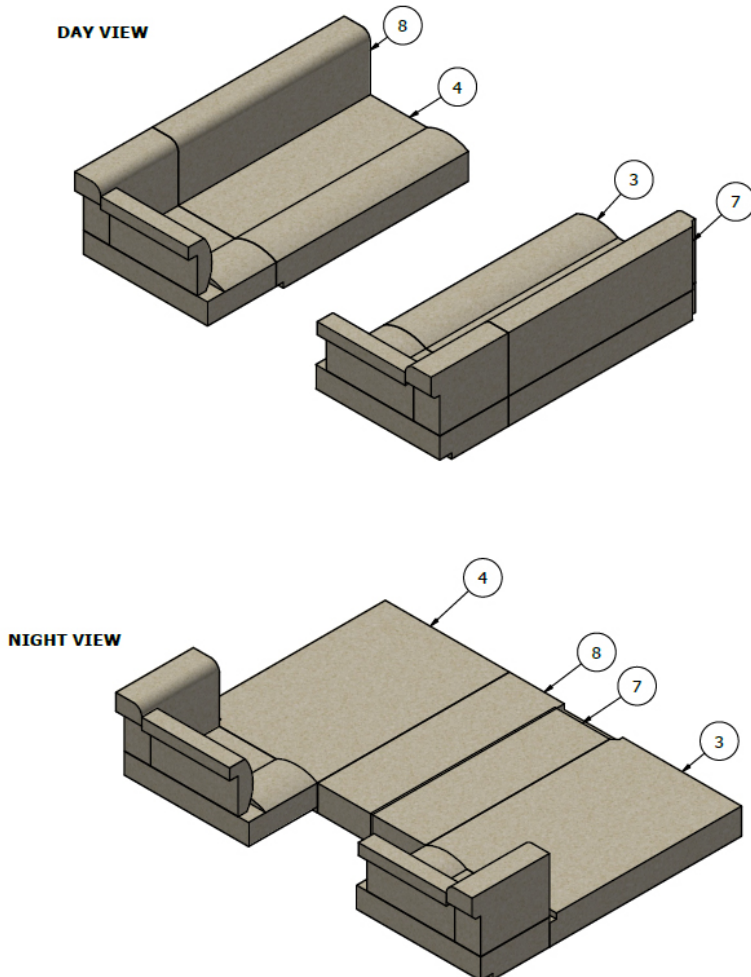
Day and Night Bed Makeup – XC Lite



BED MAKE-UP (WHIRLWIND, AVANTE APEX)

Parallel Lounge (where applicable)

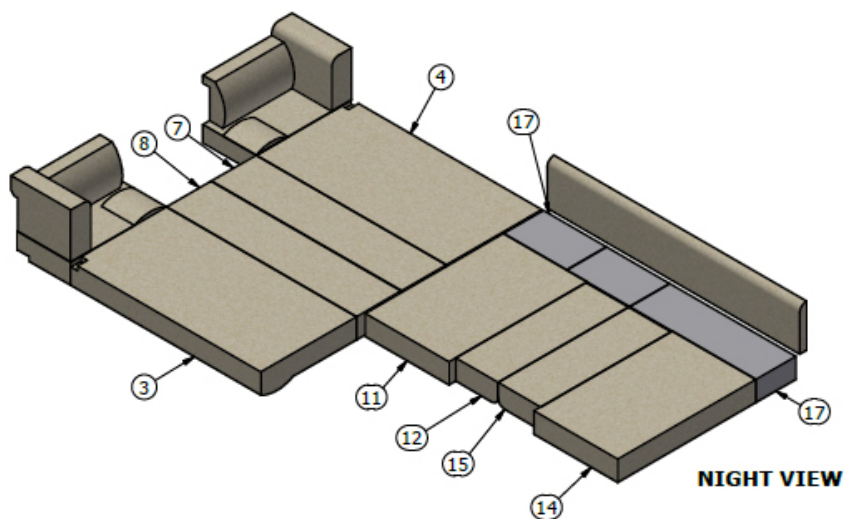
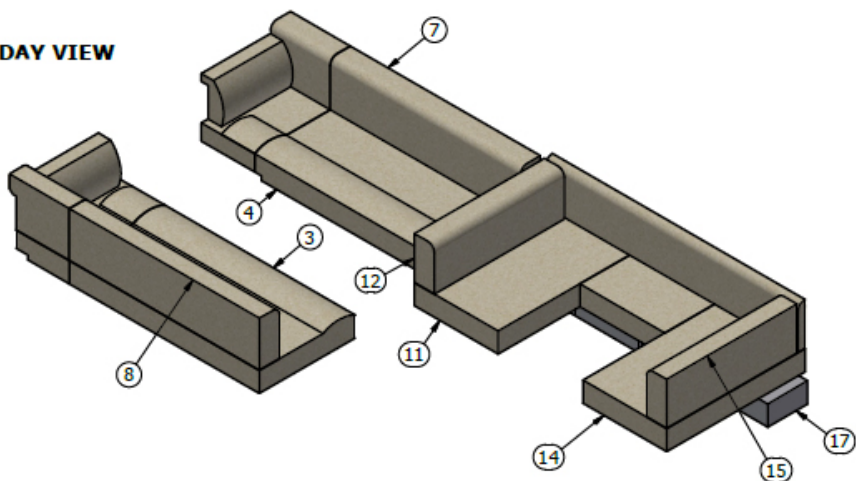
The two single beds can be easily converted into a double bed by pulling out the bed slats, stored beneath the chest of drawers or stored in the bed slat box at the front/end of the caravan. Arrange seat cushions appropriately.



HOW TO USE YOUR CARAVAN'S EQUIPMENT

Day and Night Bed Makeup - 840

DAY VIEW



HOW TO USE YOUR CARAVAN'S EQUIPMENT

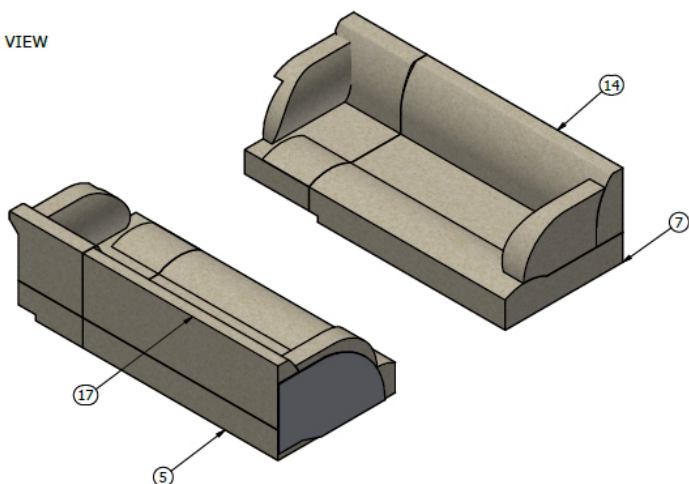
BED MAKE-UP (CRUSADER – SOLANO, SHAMAL)

Parallel Lounge

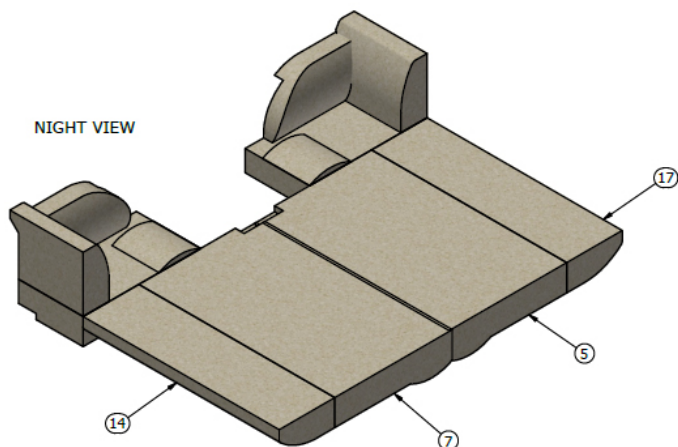
The two single beds can be easily converted into a double bed by pulling out the bed slats, stored beneath the chest of drawers or stored in the bed slat box at the front/end of the caravan. Arrange seat cushions appropriately.

Day and Night Bed Makeup

DAY VIEW



NIGHT VIEW

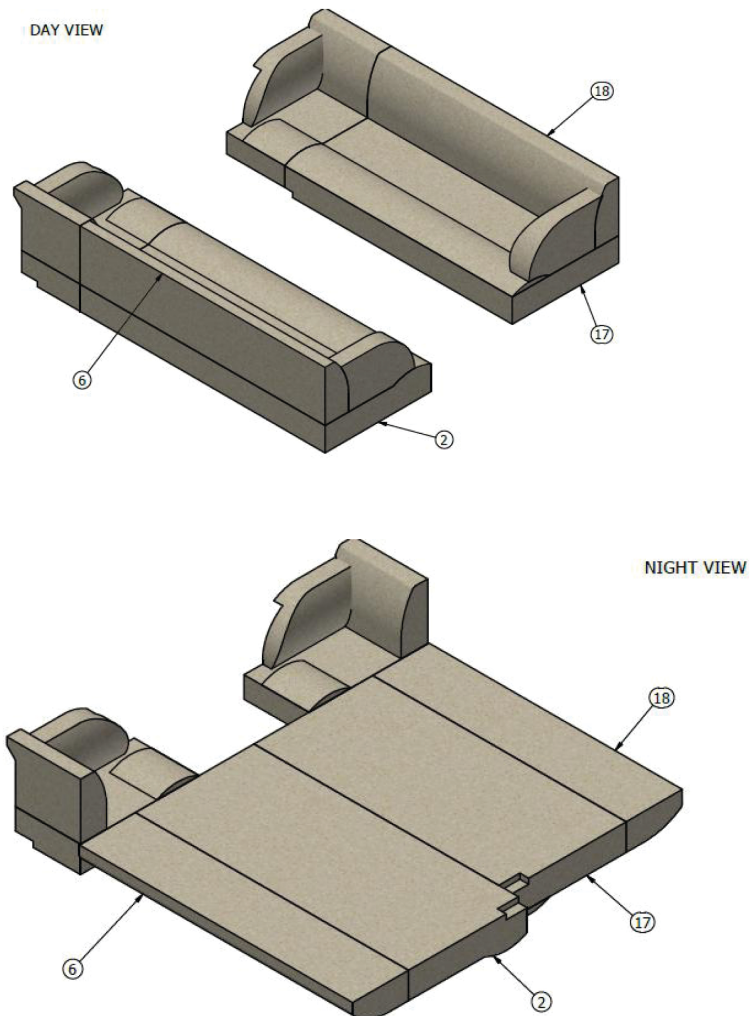


BED MAKE-UP (CRUSADER – HURRICANE)

Parallel Lounge

The two single beds can be easily converted into a double bed by pulling out the bed slats, stored beneath the chest of drawers or stored in the bed slat box at the front/end of the caravan. Arrange seat cushions appropriately.

Day and Night Bed Makeup



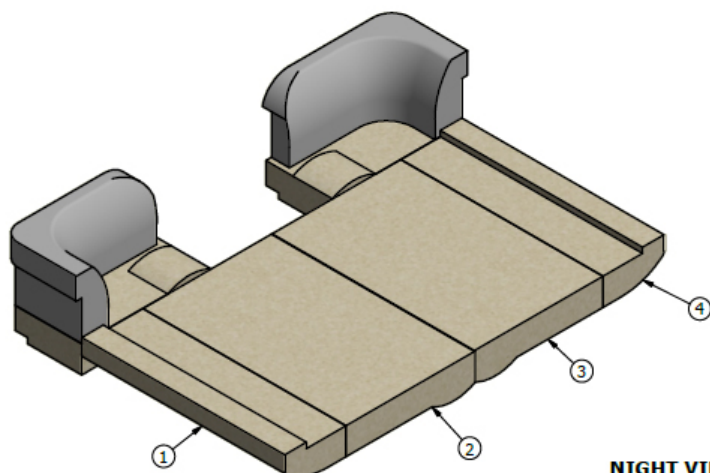
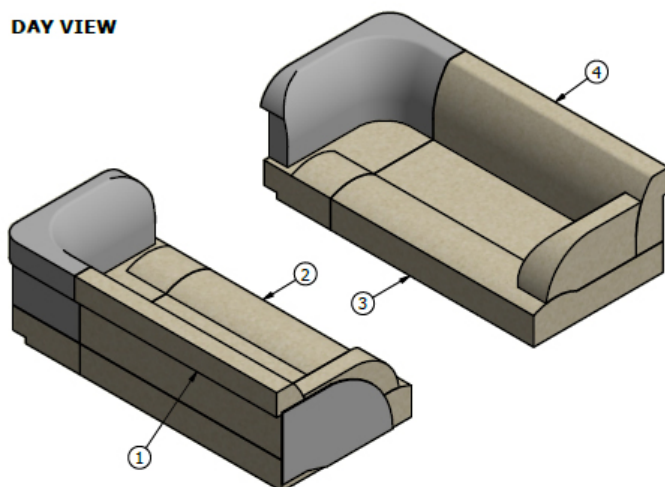
BED MAKE-UP (CRUSADER)

Parallel Lounge

The two single beds can be easily converted into a double bed by pulling out the bed slats, stored beneath the chest of drawers or stored in the bed slat box at the front/end of the caravan. Arrange seat cushions appropriately.

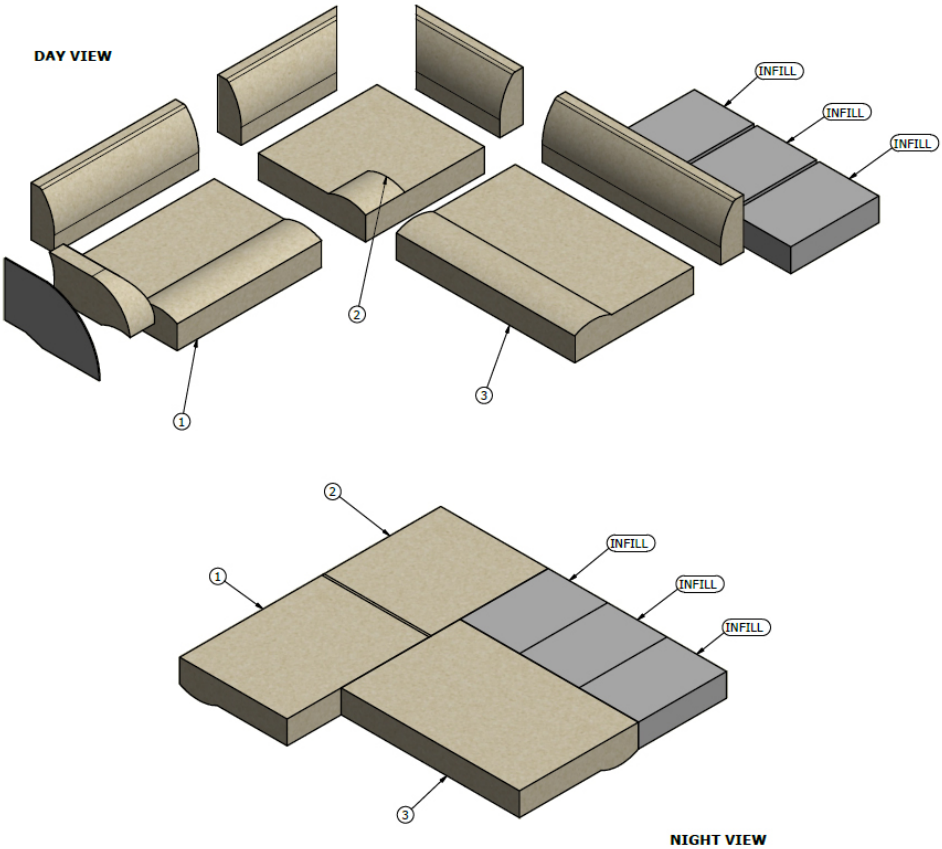
Day and Night Bed Makeup

DAY VIEW



NIGHT VIEW

Day and Night Makeup - Borealis



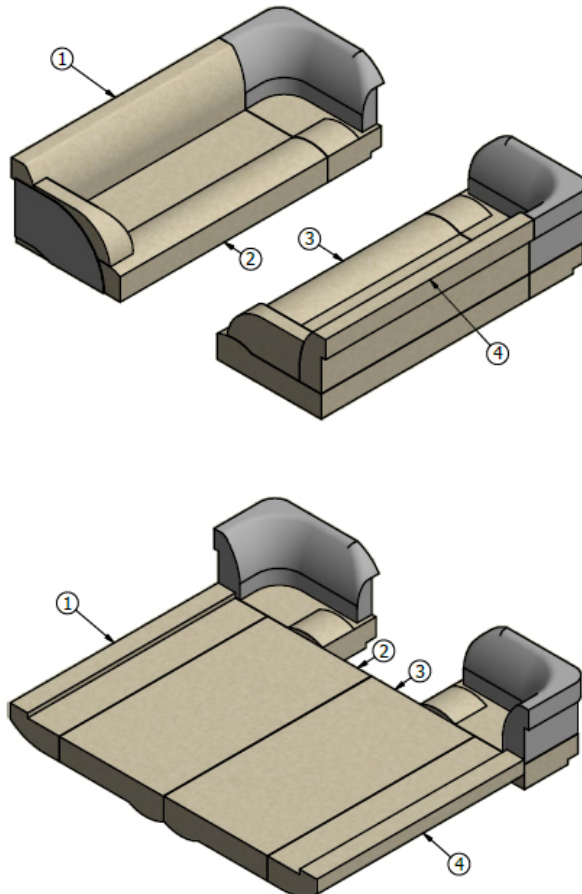
BED MAKE-UP (BUCCANEER)

Parallel Lounge

The two single beds can be easily converted into a double bed by pulling out the bed slats, stored beneath the chest of drawers or stored in the bed slat box at the front/end of the caravan. Arrange seat cushions appropriately.

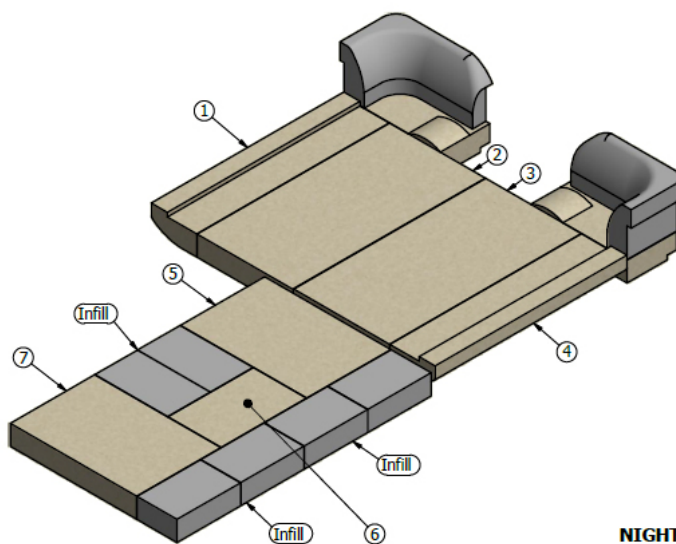
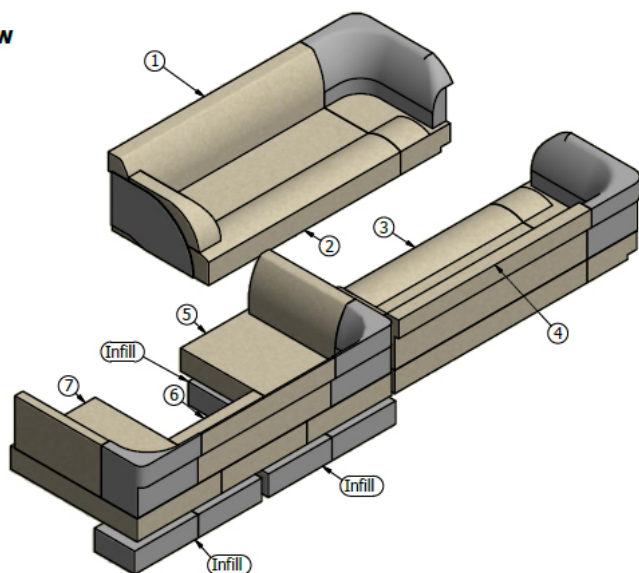
Day and Night Bed Makeup

DAY VIEW



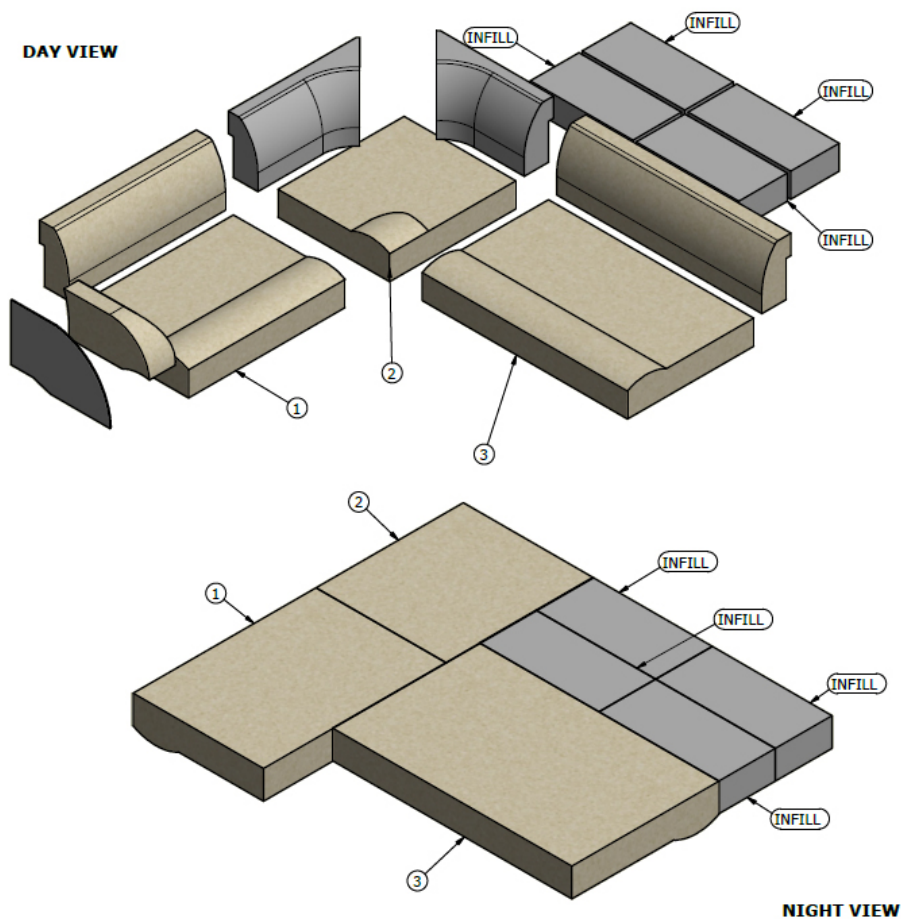
Day and Night Bed Makeup - Aruba

DAY VIEW



NIGHT VIEW

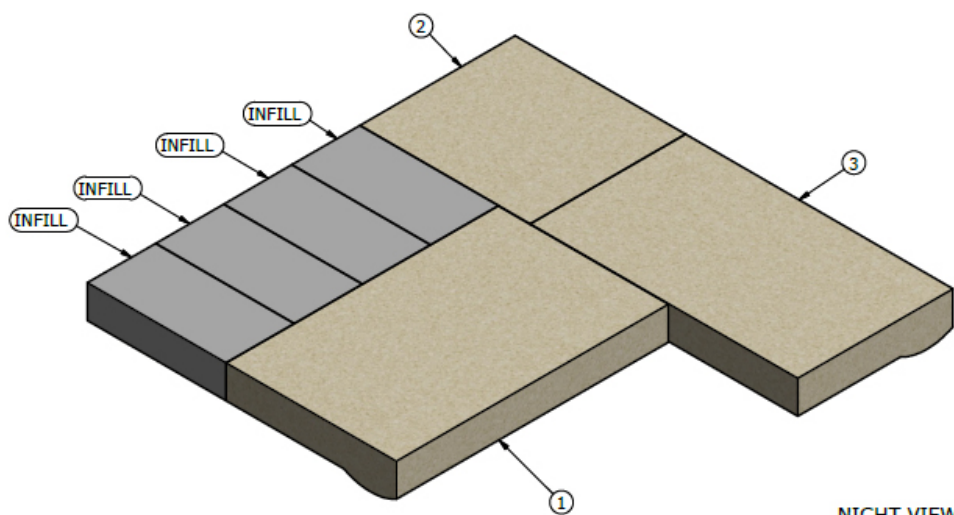
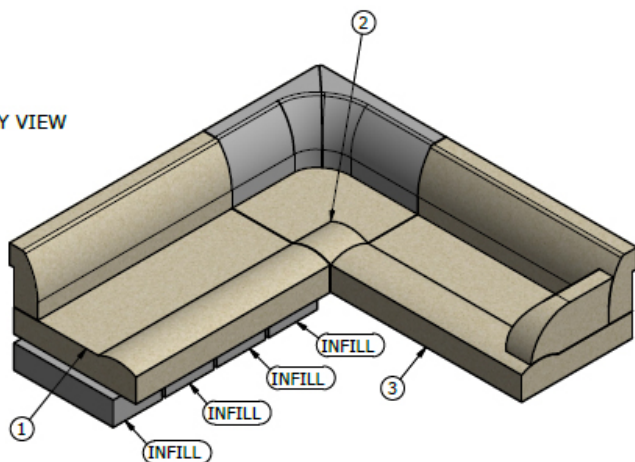
Day and Night Bed Makeup - Barracuda



HOW TO USE YOUR CARAVAN'S EQUIPMENT

Day and Night Bed Makeup - Bermuda

DAY VIEW



NIGHT VIEW

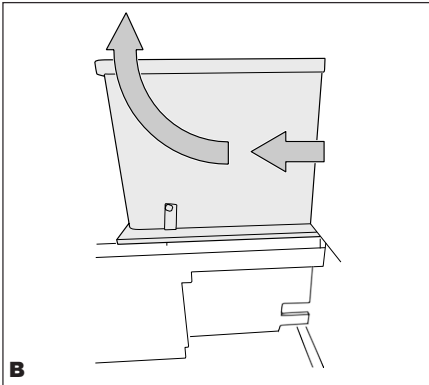
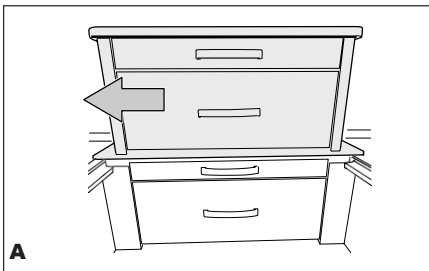
HOW TO USE YOUR CARAVAN'S EQUIPMENT

REMOVABLE DRAWERS

To remove from the caravan, first locate and release the retaining strap on the side of the unit.

Once the strap has been released the unit can be slid left as Figure A. The next step is to slide the unit forward as Figure B, once in this position the unit should simply lift out from the locator holes.

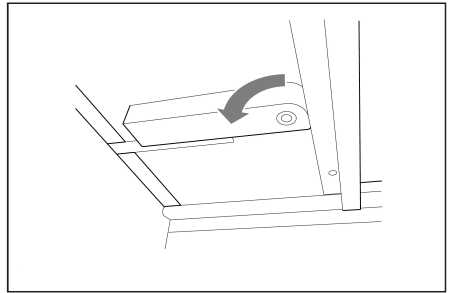
In order to return the unit to its original position, firstly locate the unit into the locating holes of the base unit. Once located then reverse the previous process.



FRONT WRAP ROUND SEATING (Option)

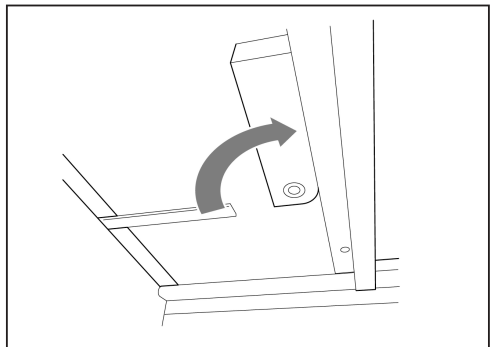
If you have purchased the wrap round seating option for your new caravan please note that the centre seat can be extended by the use of the locking mechanism which can be found under this seat.

Pull the slats forward then turn the locking plate to be in the direction down the caravan (see fig 1) in order to secure the front seat in place.



This will prevent the slats from going back into the front seat and increase the seated area.

Please ensure you return the locking plate to its normal position (see fig 2) if you wish to remove the wrap round seating.



LIFT UP BED EXTENSIONS

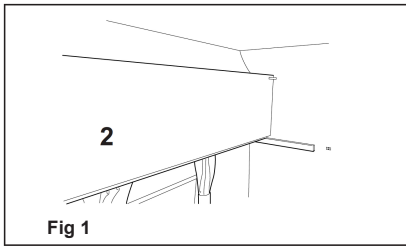
(Where Fitted)

The centre dinette bed has lift up extensions and these are operated by depressing the lever behind the flap of the hinge. While pressing the lever the extension flap can then be lifted into place.

This lever must also be depressed in order to lower the flap.

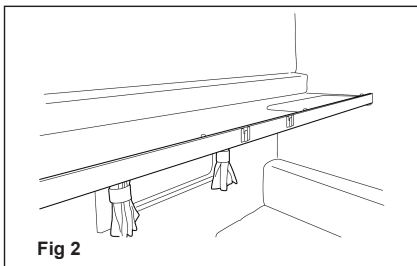
Drop Down Bunk (XC Lite only)

Starting with the bunk locked in the upright position as shown in Figure 1.

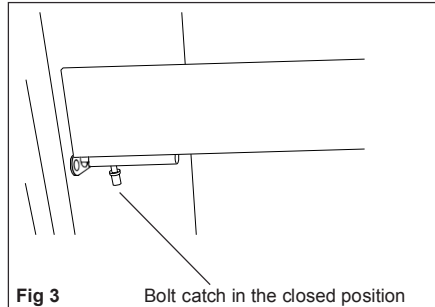


Release the bolts at both ends of the bunk from this position and lock them into the open position. Ensure the bolts are locked in the open position to prevent any damage to the walls when the bunk is being lowered.

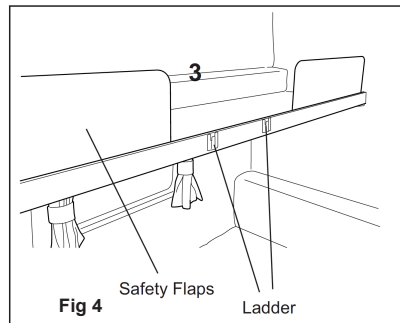
Next lower the bunk with care into the position shown in Figure 2.



Once in place, put both of the bolts into the closed position to secure the bunk from any unintentional folding. As shown in Figure 3.



Finally, before using the bunk lift both the safety flaps into upright position as shown in Figure 4 also attach the provided ladder to the fixed brackets also shown in Figure 4.



Please note: The maximum recommended weight for using this bunk is 75 kgs.

Radio with MP3

Connectivity Details on how to set up and use the Radio will be contained in your document wallet.

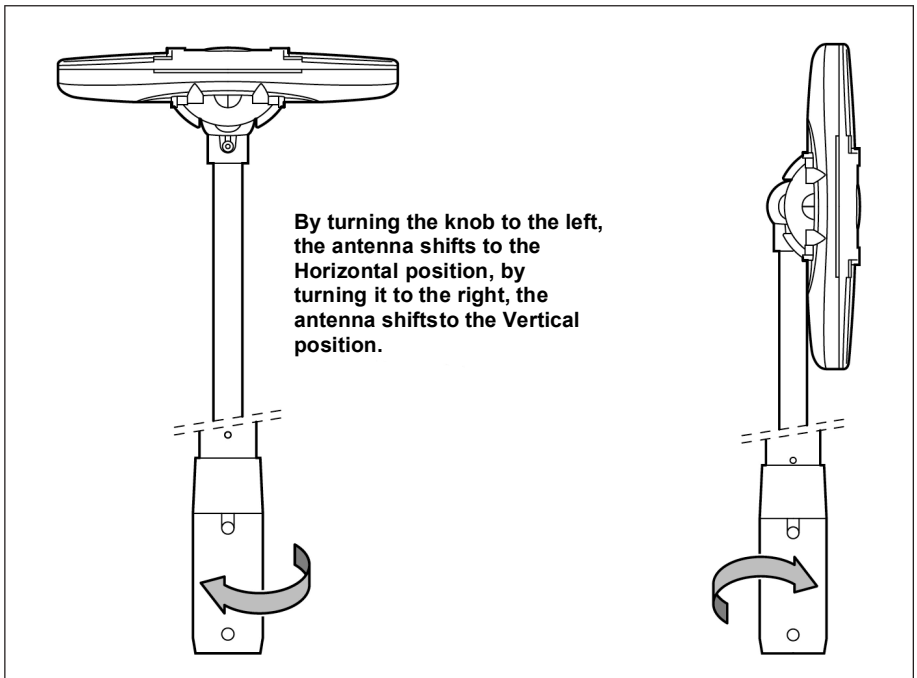
TELECO TV AERIAL



Instructions for the reception of horizontal or vertical polarity

signals In some areas certain TV signals are transmitted with horizontal polarity while others are transmitted with vertical polarity.

This antenna can be positioned both horizontally and vertically by simply turning the knob at the bottom of the mast.



Connection to the amplifier

Connect the lead exiting from the pole to the ANT input of the amplifier. Connect with the relevant lead, the TV connector of the amplifier with the television. Connect the amplifier to 12 Vdc source, making sure you do not invert the + and - terminals.

Operating Instructions

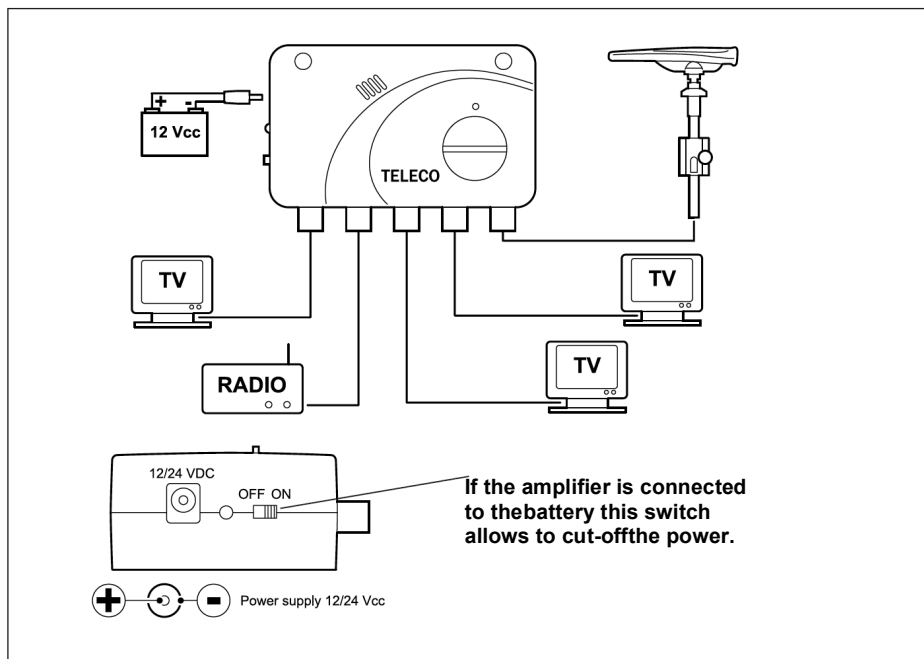
- 1) Rotate slowly the dB dial of the amplifier clockwise to the maximum +
- 2) Tune the television to a channel available in the area where you are located.
- 3) Rotate and lift the antenna via the suitable pole until you get the best image on the TV.

Useful Tips

Not all the television signals you can receive in the zone where you are located will necessarily originate from the same direction. So if the quality of a programme image is poor try rotating the antenna as the signal may be coming from a direction different from the others.

Gain Adjustment

With the dB dial turned all the way clockwise, amplifier sensitivity will be at maximum and it is therefore able to receive the weakest signals. If, instead, the signals are too strong the images on the TV screen can have some stop or macroblocks. In this case rotate the dB dial anti- clockwise slowly until the image is perfect.

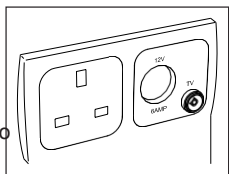


HOW TO USE YOUR TV AERIAL

Digital TV set-up guide

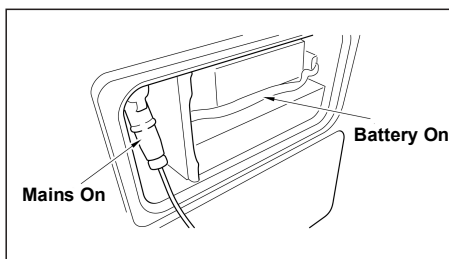
Connect aerial and power

Fix the TV to a bracket or place on a stable, flat surface, then connect the aerial cable and power lead to the TV and sockets.



Check the power is on

The aerial needs power to work correctly; check that the power is switched on (Switch on either the mains and/or battery power to the vehicle) both power sources switch on the aerial (12 Volts).



Tune in TV and choose transmitter

Switch on the TV and tune in the channels. If the vehicle is moved or a different socket is used you might need to re-tune TV. If the first transmitter picked up has poor quality pictures, then re-tune and pick another transmitter.

With Digital TV's there will be a re-tune button on the remote control use this feature and then choose manual re-tune.

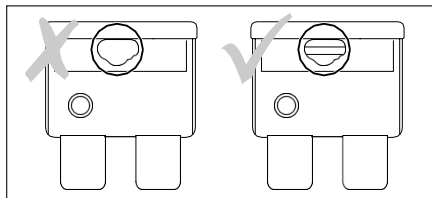
Most digital TV's will also allow you to choose the transmitter which is normally available via the Menu function.

This will vary by TV manufacturer so if you have any problems undertaking this task please refer to your TV manual.

TROUBLESHOOTING GUIDE

Check aerial/radio fuse

If there is no power, check the 5 amp fuse located within the PDU marked radio is in working order.



Check TV monitor

Check the TV is working correctly by ensuring that the channels tune in correctly in your home. If the TV does not pick up the expected number of channels we would recommend you get the TV checked out.

Number of channels picked up from your house connections

DTV :	0	Programme(s)
Radio:	0	Programme(s)
Data :	0	Programme(s)



DTV :	72	Programme(s)
Radio:	24	Programme(s)
Data :	21	Programme(s)



Check the coax lead is of good quality

Check that the TV aerial lead is of good quality (Normally cheap leads from the supermarket give reception problems, they are normally mass produced and made to a wider tolerance).

Ensure the coax lead from the aerial socket to the TV is suitable for digital reception (if in doubt, ask for advice).

Check location for signal strength

Check that the digital tv signal strength where the vehicle is situated is Very Good to Good.

Go to: www.digitaluk.co.uk

Enter the postcode and check signal strength.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

Note: Sometimes transmitters are being repaired or upgraded

Go to: http://www.digitaluk.co.uk/help_and_advice/engineering_works

Check if signal is OK that day / week.

Check there are no obstructions

Is the vehicle outside in an open space?

Check that the vehicle has no obstructions:

House lean to/canopy

Trees (also blowing in the wind)

House or other buildings

Hills

Large vehicles

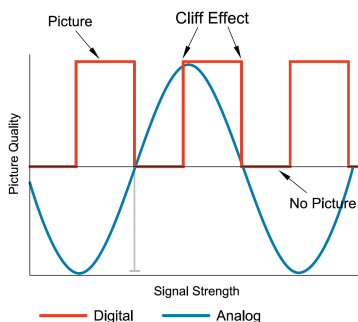
In a valley etc.



Understand digital signals

Digital signals have what the industry calls the Cliff effect.

The Cliff effect is either you have a picture or not within a very small difference of signal strength. This happens with both weak and strong signals.



Troubleshooting guide - Checklist

Action	✓ or X
Check aerial fuse	
Connect aerial and power	
Check the power is on	
Tune in TV and choose transmitter	
Check TV monitor	
Check the coax lead is of good quality	
Check location for signal strength	
Check for obstructions	
Understand digital signals	

If after following this guide you still have problems, contact your local Retailer or Approved Workshop.

(i) **PROTECT - AUTOWATCH ALARM SYSTEM (WHERE FITTED)**

Manufactured by Autowatch, The system is designed to give years of trouble free operation. Made with only the highest quality components and using state of the art technology you can be assured that your caravan has the best electronic protection available.

Each caravan alarm is installed with a Passive Infrared Detector (PIR), a sensor that detects movement in the caravan and transmits a radio signal to the alarm module. If the alarm is on the siren will sound. A leg sensor, fully sealed against dust and water, will detect if the corner stabilising leg is being raised or lowered and transmits a coded radio signal to the alarm.

Additional sensors can be purchased from your retailer to enhance security.

See section below for operation or consult the manufacturers instructions provided in the Owners Information Pack.

Basic Operation Arming the System

- (i) Briefly press (large) arm/disarm button.
- (ii) Single chirp.
- (iii) Awning light illuminates for 30 seconds.
- (iv) Settling time of 15 seconds before responding to triggers.
- (v) Single intermittent flash of status LED (every 2 seconds).
- (vi) All sensors triggered will result in siren sounding for 30 seconds, or until reset by pressing the arm/disarm button.

Disarming the System

- (i) Briefly press the (large) arm/disarm button.
- (ii) Double chirp.
- (iii) Awning light illuminates briefly on and off and then on again for 30 seconds.
- (iv) LED off.

Panic Alarm

- (i) Press and hold the small panic button on the transmitter for two seconds.
- (ii) The siren will sound for thirty seconds, unless reset by pressing any of the transmitter buttons.

Emergency Disarm

Insert the touch-key briefly into the socket. The alarm will turn off.

Silent Arm and Disarm

- (i) Press the small button briefly followed by a press on the arm/disarm button.
- (ii) The alarm will arm/disarm without chirps.

Sensors

Each caravan alarm is installed with a Passive Infrared Detector (PIR) and a leg sensor. Additional sensors can be purchased from your dealer to enhance security.

Passive Infra Red Sensor

The wireless PIR sensor will detect movement in the caravan and transmit a radio signal to the alarm module, if the alarm is on the siren will sound.

Leg Sensor

The leg sensor will detect the corner stabilising leg being raised or lowered and transmit a radio signal to the alarm. The leg sensor is fully sealed against dust and water and has a battery life expectancy of three years. When the battery becomes exhausted, the sensor will need to be replaced.

Enhanced Features Arming The System In "At Home" Mode

In the 'at home' mode, any sensor that is programmed to be isolated, such as the PIR sensor will not trigger the alarm. Other sensors, such as the leg sensor, will trigger the siren. Arm as normal followed by a second press on the arm/disarm button within 2 seconds. Normal "on" tone followed by "at home" tone indicating isolation is active. Settling time of 15 seconds before responding to triggers. Armed in the isolation mode will be indicated by a double flash intermittently of the LED. The "at home" sensors will be isolated; other sensors will trigger the siren for 30 seconds.

Arming the System in Test Or Buzz Mode

In the buzz mode the siren will sound a short tone when a sensor is triggered instead of sounding for 30 seconds. It is advisable to test all the sensors.

AL-KO Trailer - Control

AL-KO Automatic Trailer Control is an electronic control system that reacts quickly to maintain the stability of the car and caravan. The system continually monitors the stability of the caravan during a journey and operates when an unstable condition is encountered. When AL-KO ATC activates, the driver will feel the vehicle being slowed down by the soft braking of the caravan.

AL-KO ATC LED OPERATION

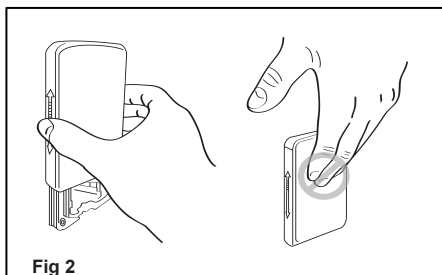
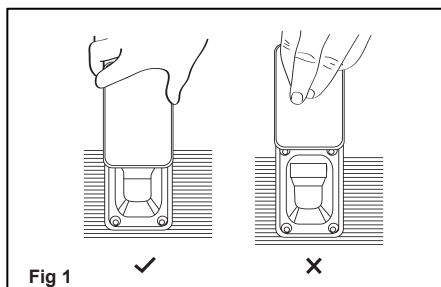
Display Colour	ATC Condition	Diagnosis	What to do	Outcome	Status
Green	ATC Active	Everything OK			
Green Flashing	ATC Active	Self test incomplete	Drive forward to detect movement to complete self test and recheck LED	Green (Constant)	Ready for journey
Red	ATC Inactive	Possible to continue journey	Remove 12S or 13 pin plug and wait five seconds. Reconnect plug	Green	Ready for journey
				Red	ATC fault detected but can be driven
Red flashing	ATC has detected a fault	Do not continue with ATC connected	Remove 12S or 13 pin plug and wait five seconds Reconnect the plug.	Green	Ready for journey
				Red (flashing)	ATC fault detected cannot be driven. Remove pushrod

Flashing Green - Simply the ATC is waiting to detect movement. Drive a few metres and the light will change to green.

Flashing Red - To provide further explanation if the constant RED light is showing: There are a number of errors that the ATC logs and some are self repairable by the customer but some will require the ATC to be monitored by the diagnostic equipment that is available and the AL-KO service engineers are trained to use.

Whale Easi-Slide Socket

How to open the socket lid



Safety Information

This appliance is **not** intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

- Children **must be** supervised to ensure that they do not play with the appliance.
- Any alteration to the appliance, misuse or use of non-original Whale parts may invalidate the warranty. Non observation of the installation and operating instructions will lead to cancellation of the warranty and exclusion of liability claims. It also becomes illegal to use the appliance if incorrectly installed, and in some countries may make it illegal to use the vehicle.

Additional Safety Information for Onboard Tank Fill, On Board Tank Fill +12v and Water In / Out Sockets (Where Applicable)

- For use in recreational vehicles with a typical water system pressurised up to 3 bar.
- When using the **Water In Socket**, Whale recommends that you keep the o-rings lubricated for easy and secure connection/removal of the plug to socket. Use a water-based lubricant such as silicone grease. **Please note: Do not use vaseline or vegetable oil to lubricate o-rings.**

Additional Safety Information for External BBQ Outlet Socket (Where Applicable)

Whale BBQ sockets including the gas hose connector must be installed and serviced by a Qualified Gas Engineer in accordance with these installation instructions and BS EN 1949-2011.

WARNING: Care must be taken when using the external BBQ outlet socket. NEVER barbeque next to an awning or tent.

WARNING: Only for use as an outlet point for gas, never connect a gas bottle directly to the outlet.

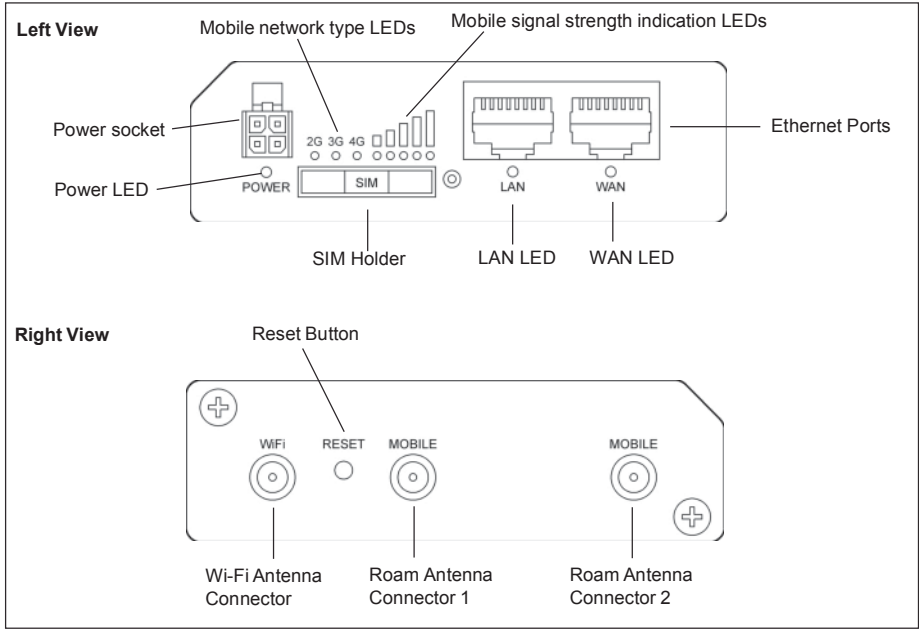
In the unlikely event of leaks in the gas system, or if there is a smell of gas:

- Extinguish all naked flames
- Switch off all appliances and do not operate any electrical switches
- Turn off all gas appliances
- Open windows and doors for ventilation
- Do not smoke
- Shut off gas connection
- Immediately ensure that the system is thoroughly checked by a **Qualified Gas Engineer**.
- Regularly inspect gas tap to ensure inside nozzle is free from debris, and gas connection to the rear has not been damaged.
- Supply to external appliance **should not be** less than 0.03 bar and not greater than 0.05 bar.

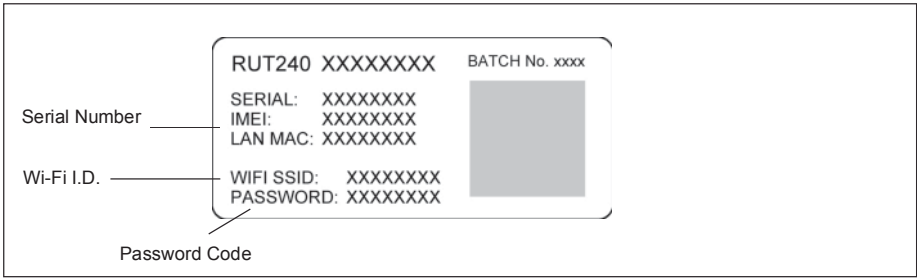
Mobile Internet (Where fitted)

If this option is applicable, your router has already been installed in the optimum position within your vehicle. The location of the internal router may vary depending on vehicle layout. The information below outlines the basic setup and how to get online. For more detailed information, please refer to the manufacturers operating instructions supplied with your vehicle.

Get to know your Router



Credential Router Sticker (located on the reverse of the Router)



HOW TO USE YOUR CARAVAN'S EQUIPMENT

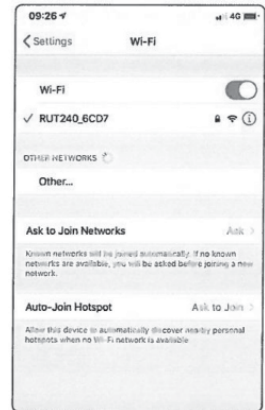
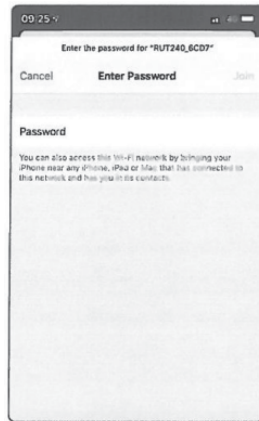
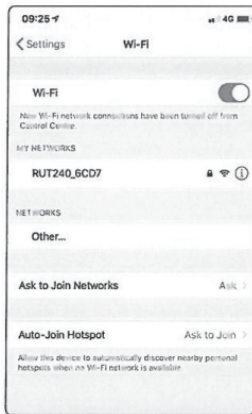
Getting Online

Now your Roam is installed and you have inserted the SIM card, its time to get connected. To do this, you will need to be using a device which can connect to a Wi-Fi network such as a smart phone, Smart TV, tablet or laptop.

1. Turn on router and allow 2 to 3 minutes for the router to boot.

When ready, the router name will be visible in your devices Wi-Fi settings.

Device Settings



1. Navigate to your devices Wi-Fi settings and view available Wi-Fi networks.
2. The Roam router will be displayed as RUT240_XXXX. The last 4 characters will be unique to your Roam router.

If more than one Roam is being used within close proximity, the Wi-Fi network name is displayed on the back of the router.

- 3.

Once you select this network, you must enter the password. This is also printed on the back of the router.

Note: Password is case sensitive

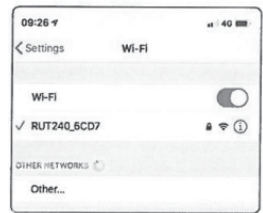
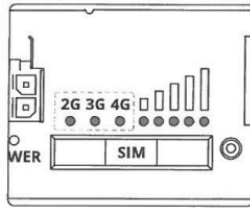
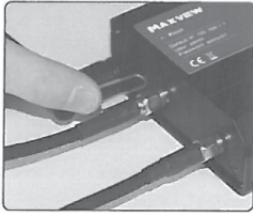
4. You are now connected and can begin using your Roam.

Factory Reset

At any time, the Roam router can be reset to its factory settings using the reset button on the side of the router. This will restore all settings on the router, including:

- Router SSID (network name) and password to those listed on the back of the router.

- Web User Interface to the username and password listed on the front of the router.
- All custom settings will be deleted, including any Wi-Fi connections you may have added.



1. To complete the factory reset, press and hold down the reset button with the supplied pin needle.

2. Hold for 6 seconds, until all of the green LEDs on the side of the router are on.
Once released all 5 signal strength LEDs will flash together.

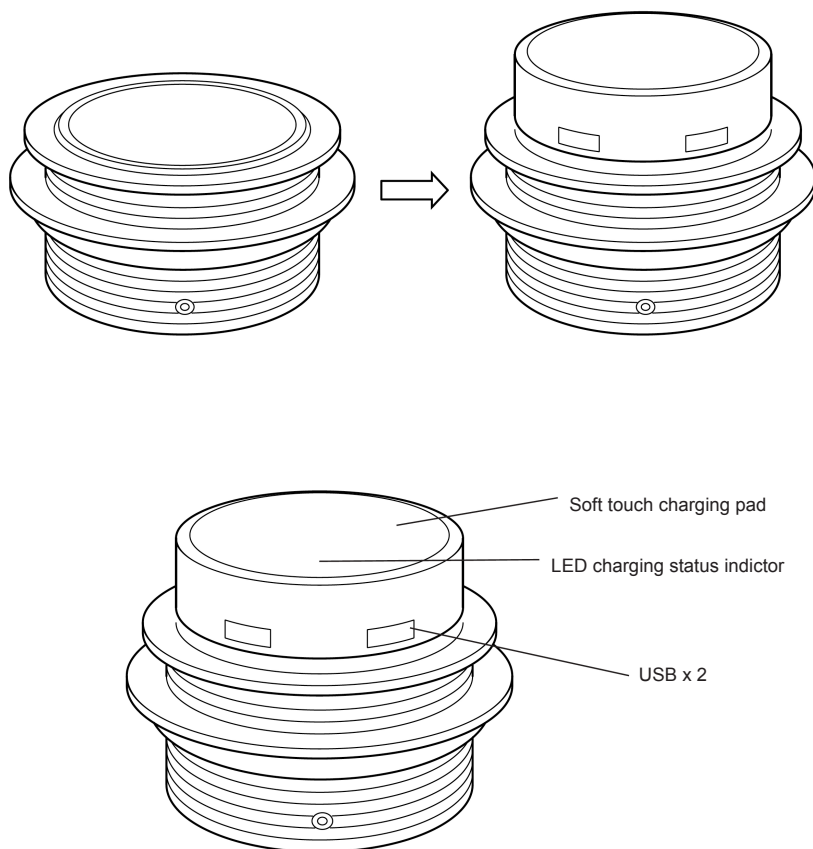
3. Allow 3 minutes for the router to reset. Once reset the Wi-Fi network will be visible and available to connect to.

Pop-up Wireless Charging and USB Device (Where Fitted)

Your vehicle is fitted with a wireless charging device, as shown in the image below.

Your device must contain wireless charging technology to be compatible with this charging station. Your device can be charged on this charger both in the extended or stowed position, by simply placing your device onto the charging pad.

The soft touch pad is spring loaded and can be pressed to either extend or retract the top of the charging station. When in the extended position, two USB ports become visible and can be used for additional hard wired charging or to interact with any other device as necessary.



Air Conditioning (Where fitted)

Symbols used



Symbol indicates possible hazards.



None containing information and tips.

Safety Instructions



Only competent and trained persons (experts) may install, repair or perform the function check on the Truma product in accordance with installation and operating instructions and the currently accepted technical regulations. Experts are persons who, based on their specialist instruction and training, their knowledge and experience with Truma products and the relevant standards, can carry out necessary work properly and identify potential hazards.

This appliance may be used by children from 8 years old and by persons with disabilities or with lack of experience only if they are supervised or have been instructed in the safe use of the appliance and understand the resulting risks.

Children must not be allowed to play with the appliance.

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 electrical control unit in the device and must always be replaced with an identical fuse.

In particular, the following will render warranty and guarantee claims void and lead to exemption from liability claims:

- Modifications to the appliance (including accessories).
- Using replacement and accessory parts other than original Truma parts.
- Failure to follow the installation and operating instructions.

The appliance's operation permit, and consequently also vehicle's operating permit in some countries, are also rendered void.

The refrigerant circuit contains R 407C refrigerant and must be only opened **in the factory**.

The air inlets / outlets at the external unit and the air distributor must not be obstructed under any circumstances. This is essential in order to ensure that your device operates correctly.

To prevent damage to the appliance, it should not be operated continuously at an incline of more than 8%.

Do not operate the device in cooling mode for long periods with the vehicle at an angle, since the condensation that is produced may not be able to run away and may penetrate the vehicle under unfavourable circumstances.

In order to ensure that the equipment works properly and to avoid damage, only power supply sources with a purely sinusoidal wave from (e.g. voltage convertor, generator) and without voltage peaks must be used.

When the vehicle is being cleaned it must be ensured that no water gets into the device when spraying with a high-pressure cleaner, for example (do not spray directly into the openings of the device).

Hot cleaners and steam cleaners must **not** be used.

The condensation traps must be clear at all times during operation.

Notes on using air conditioning systems

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 the blinds reduces the amount of heat radiation.

Clean your roof at regular intervals (a dirty roof heats up more than a clean roof).

The vehicle must be properly ventilated 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 dehumidified 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 forms on the air distributor.

For faster cooling or heating:

- Set fan level to high.
- Set front / rear air distribution to center position.
- Set floor / ceiling air distribution to ceiling.

Operating Instructions

i Operating instructions can be viewed in offline mode with a mobile device and the Truma App. Download the operating instructions when you have WIFI connections and save them to your mobile device.

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

Remote control

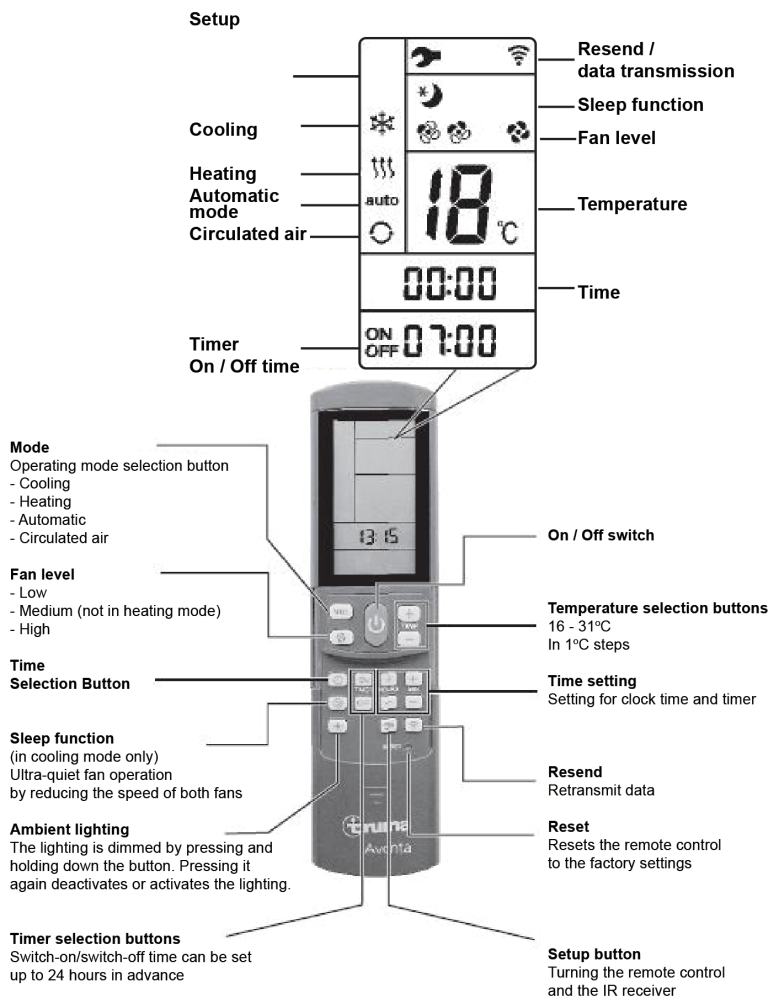


Figure 1

Start-up

The air conditioning may only be operated via the vehicle's own power supply (battery, inverter).

Before switching on, be sure to check that the vehicle has adequate power supply fusing (230 V).

The remote control must always be pointed at the infrared 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 the Setup button.

The remote control is tuned to the IR receiver, the Setup symbol goes off and the air conditioning system starts in circulated air mode, at low fan level and with no timer set.

Switching on

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

 The circulated air fan runs after switching on. The compressor switches itself on 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 setting)
- 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 that was selected using the remote control is reached in **heating mode**, the compressor switches off and the yellow LED in the IR receiver goes off. The circulated air fan continues to run in order to provide ventilation. If the temperature drops below the room temperature setting, the device automatically switches 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 / heating mode and the fan level are selected automatically depending on the room temperature.

In **circulated air mode**, the interior air is recirculated and cleaned by the filters. 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 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 circulated air fan runs, and the compressor switches on after no more than 3 minutes.

Time

Press the **"Time selection button"** and set the 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

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, using the integrated timer.

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** or **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 the **"Ambient lighting"** button. The previous setting is activated when it is switched on again.

Reset

Resets the settings of the remote control to the factory setting when pressed using a ballpoint pen, for example. Set up symbol flashes.

Resend

The previous settings are resent.

Setup

Tune the remote control to the air conditioning system that is going to be operated.

IR Receiver and manual on / off

There is an additional pushbutton on the IR receiver (m), with which the unit can also be switched on and off without the remote control (e.g. with a ballpoint pen).

If the unit is switched on using this pushbutton, the system is automatically reset to the factory settings (automatic mode, 22°C).

IR receiver / function display



Figure 2

LED 1 blue – illuminated – (cooling mode)

LED 1 blue – flashing – (heating mode compressor start-up)

LED 2 yellow – illuminated – (heating mode)

LED 2 yellow – flashing – (heating mode compressor start-up)

LED 3 red – flashing – (data transfer in progress)

LED 3 red – illuminated – (fault)

Red LED illuminated

The device is indicating a fault. Switch device off, wait for a short time and switch on again. If the red LED continues to illuminate, please contact the Truma Service Centre.

Air Distribution

Right / left

There are two individually adjustable air outlets at the front and rear.

Front / rear

The air flow can be metered between the front and rear areas of the vehicle.

Ceiling / floor

The air flow can be directed from the ceiling to the floor.

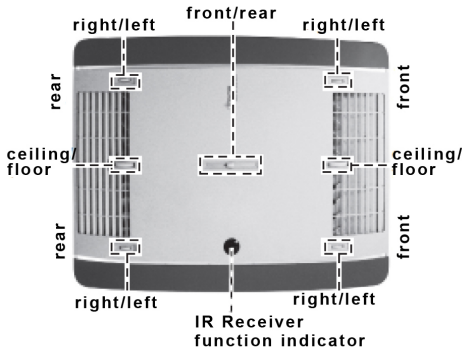



Figure 3

IR remote control battery change

 The tuning between the remote control and the air conditioning system is retained if the batteries are removed.

Only use micro-batteries that will not leak, type LR 3, AM4, AAA, MN 2400 (1.5V).

The battery compartment is on the back of the remote control.



When inserting new batteries, make sure the positive / negative terminals are connected correctly.



Empty, used batteries can leak and damage the remote control!
Remove the batteries if the remote control is not being used for a long period of time.

Figure 4

No warranty is given for damage caused by leaking batteries.

Disposal



Neither the remote control nor the batteries may be disposed of with domestic refuse, instead they must be sent for recycling separately via a collection point. By doing this you are contributing towards reuse and recycling.

Maintenance

Maintenance, repairs and cleaning must not be done by children.

Carry out filter changes depending on the amount of use, but at least every 12 months. Never operate the air conditioning system without a filter. This can lead to loss of power. Keep the air inlets / outlets and condensation traps on the roof free of obstructions such as leaves at all times. The air conditioning system should be only cleaned with a soft, damp cloth.

Disposal

The appliance must be disposed of in accordance with the administrative regulations of the respective country in which it is used. National regulations and laws (in Germany for example, the End-of-life Vehicle Regulation) must be observed.

In other countries, the relevant regulations must be observed.

Troubleshooting

Error	Cause / Remedy
Device not cooling	- Thawing procedure in progress - Remote control temperature setting reached or too high
Device not heating	- Thawing process in progress (outside temperature between 4°C – 7°C) - Outside temperature below 4°C
Device cooling / heating inadequately or not at all	- Filter soiled, change filter - External air routes soiled / blocked
Moisture on underside of air distributor	- Close all windows and doors and select high fan level
Water dripping out of air distributor	- Condensation trap on external unit blocked - Seal between device and roof not intact - System at too much of an angle
Remote control not working	- Check batteries in remote control and replace if necessary
Device not reacting to remote control commands	- Check whether there are obstructions between the remote control and IR receiver - Is the remote control tuned to the IR receiver? / Tune remote control to IR receiver.

If these actions do not remedy the problem, please contact Truma Service.

Solar Panel Regulator (Where fitted)

Safety Instructions



To protect you from electrical shocks, injury or burns the following basic safety principles must be observed when using electrical devices. Please read and follow these instructions before using the device.

Installation

Ensure that the devices are fixed with all 4 mounting holes safely and cannot fall. Always position the cables to ensure they do not pose a tripping hazard. Do not expose electrical devices to rain. Do not operate electrical devices in damp or wet environments. Do not operate electrical devices close to flammable liquids or gasses.

Protection against electrical shocks

Only operate devices with undamaged casings and cables. Ensure the cables are installed safely. Do not pull on the cables.

The solar panel generates power when light is cast on it. The full voltage is also available even if there is little light. The open circuit voltage may be twice as high. Do not touch any live parts. Cover solar modules with e.g., cardboard, before mounting and installing, or disconnecting.

Use

This device has not been designed for use by people (including children) who have restricted physical, sensory, or mental abilities or a lack of experience and/or knowledge, unless they are supervised by a person responsible for their safety or have received instructions from that person as to how the device is to be used.

Children should be supervised to ensure they do not play with the device.

Do not use electrical devices for purposes other than those stated by the manufacture. The ventilation slits in the housing must be free and may not be covered by luggage, towels, or clothing etc.

Caution

Batteries may generate explosive gases during charging and operation. Keep away from flames and ignition sources. Ensure these is sufficient ventilation in the battery chamber.

Repairs

Do not repair or modify the device. Please contact your dealer or the Truma Service see www.truma.com or 01283 587960.

Accessories

Only use accessories and additional device that are supplied or recommended by the manufacture.

Intended use

Increased capacity with manufacture's written approval. The solar dual battery charger controller only serves to charge 12vDC lead accumulators comprising 6 single cells (for example leisure battery) with a capacity of 80 – 110* Ah (SDC12) or 80 – 200** Ah (SDC25). The device was developed for connection to solar modules. Only use suitable modules for example Truma SM 25, 40, 65, 80, 100, 120, 150 or 180. Observe the maximum voltage and power draw values. The preferred application fields for the automatic charger are batteries with gel, AGM or liquid electrolyte.

The device is designed for installation a dry indoor environment.

Improper use



The device is not suitable for charging.

- 6 V batteries or 6 V Lead accumulators
- non-chargeable batteries
- nickel-cadmium batteries

If batteries with a rated voltage of 6 V are charged with the device, gassing occurs immediately. An explosive gas can be created.

The device is only suitable for regulating solar modules. Do not connect any other voltage sources (for example main voltage 230vAC or 24vDC) to the device. This may destroy the device and/or sources. If any other voltage sources are used together with the device, please ask your dealer.

HOW TO USE YOUR CARAVAN'S EQUIPMENT

Battery care (also, maintenance-free batteries)

The following points should be observed to extend the battery life:

- Batteries should be fully charged before and after being used.
- In the case of longer standstills (without sunshine), disconnect the battery and charge separately for 24 hours at the latest every 12 weeks.
- Note: before disconnecting a leisure battery or vehicle battery, a competent person must first switch off any central control (power distribution) device and remove the charge controller supply fuse OR cover the solar panels to prevent power generation.



Store fully charged batteries in a cool but frost-free place during the winter and recharge regularly (every 12 weeks).

Device elements

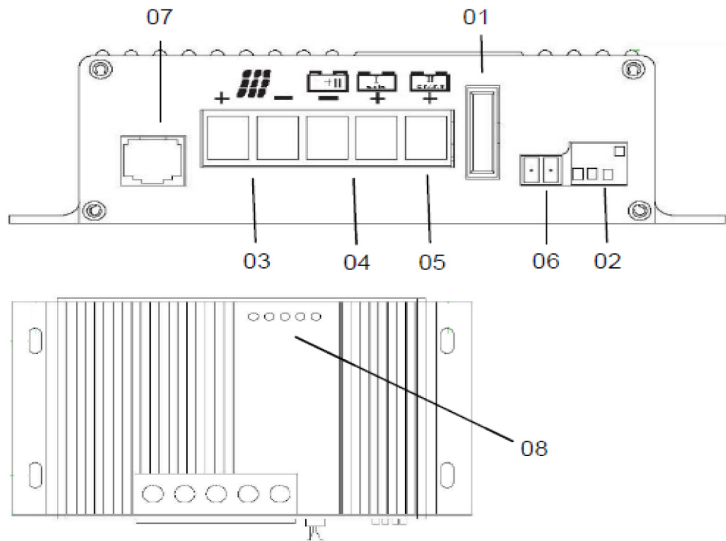


Fig 1: Device elements

- 01** Main Fuse 20amp SDC12 – 40amp SDC25
- 02** DIP switches for battery type selection
- 03** Solar input terminals – positive & negative
- 04** Main battery output terminals – positive & negative
- 05** Starter battery output terminal – positive only
- 06** Temperature sensor socket (sensor optional)
- 07** LCD meter socket (LCD meter optional)
- 08** Status indication LED's

Function

The device is a MPPT, or maximum power point tracker, an electronic DC to DC convertor that optimizes the match between the solar panels (PV panels) and battery. This allows high performance combined with a light weight and small dimensions. By virtue of the high-quality electronics, it works highly efficiently. The automatic charging process preserves the device and does not overcharge the batteries. This in turn extends the service life of the batteries. This in turn extends the service life of the batteries significantly. It is suitable for batteries with liquid, gel or AGM technology and has settable charging current distribution for two separate battery connections.

The device is capable of continuous operation and parallel mode. Consumers can be continuously connected, switched on or disconnected. Consumers are supplied and the batteries are charged at the same time via the battery. The consumer current here should be smaller than the solar charging current as otherwise the battery will not charge.

If the device is operated in conjunction with an external temperature sensor for the supply battery (battery 1), the device regulates the charging voltage automatically depending on the battery temperature. This ensures particularly effective and gentle charging of the battery. If an external temperature sensor is not used, the device regulates the charging process based on the internal temperature sensor.

The supply and starter batteries can be charged by connecting one or several solar modules. Please observe the maximum voltage and power consumption values detailed on the controller reverse. This type of connection should be completed in parallel.

Charging process

The device has an electronic reverse input voltage, reverse current and solar short-circuit protection. The charging current is only released (see "charging diagram") if the battery is connected correctly and there is enough power available from sunlight. When a temperature sensor is used, charging takes place in a temperature-dependent basis.

Boost phase

Charging with maximum available solar charging current until the charging end voltage is reached.

Float phase

The charging voltage is set to 13.8v for GEL type, see battery charging table for other types. The charging current drops to the value necessary to compensate the self-consumption of the battery. Power is still supplied to the consumers via the battery. If the consumed current exceeds the available solar charging current, the charging process can no longer be maintained.

If the battery voltage drops below the selected battery type voltage, the device automatically switches to the boost phase, if there is adequate solar charging current.

Partially Discharged Batteries

(only for AGM and liquid electrolyte battery type)

In contrast to other battery types, batteries on lead basis do not have any harmful memory effect. Consequently: In case of doubt, partially discharged batteries must be charged fully as soon as possible.

Always store only fully charged lead batteries. Recharge them periodically, partially in case of used (older) batteries and higher temperatures.



- Liquid electrolyte batteries can create explosive gases, so ensure there is adequate ventilation. Check the liquid level at regular intervals. Over charging can damage your battery; check the technical data for your battery.

In case insufficient solar power and/or high current consumption, the battery should be subject to occasional full charging by means of a mains supply charger.

Overvoltage Protection

The 12v solar controllers protect themselves against connection of excessive battery voltage rates or will be switched-off in case of defective additional charging systems, switching threshold 15.0-16.0v.

Overvoltage Limit

Sensitive consumers are protected by means of limitation of charging voltage to maximum 14.8v during all modes of charging/battery type.

Battery Type Selection

Operation

On the Charge Controller bottom face, the battery type DIP switches and battery type table can be found. Confirm the type of battery being fitted and arrange the DIP switches to its corresponding configuring.

Battery type

The battery type can only be set for Main Battery 1. Starter Battery is only supported by trickle charging to a maximum 1amp in all settings.

	1	2	3	4
GEL	↓	↑	↓	↓
Lead Acid	↓	↓	↑	↓
AGM	↓	↓	↓	↑
LiFePO4	↑	↓	↑	↑

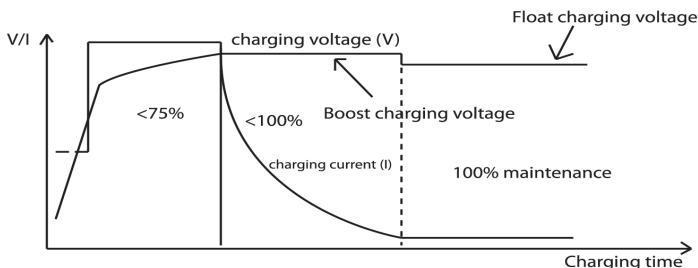
ATTENTION: Only connect LiFePO4 batteries with integrated BMS!

Note: The possible parallel/floating operation with consumers being connected to the battery is also automatically considered by all charging programs.

Charging Parameters

Battery Type	Boost Charging Voltage	Float Charging Voltage	Default Temperature
GEL	14.3 volts (3-10 hours)	13.8 volts	20°C
Lead Acid	14.4 volts (1.5 - 6 hours)	13.45 volts	20°C
AGM	14.7 volts (1.5-5 hours)	13.5 volts	20°C
LiFePO4	14.4 volts (0.5 - 3 hours)	13.8 volts	20°C

Charging Process



Function display / troubleshooting

On the Charge Controller front face, status LED's are positioned. The following table details the indicating condition of each LED.



Display	Status
Batt Low - illuminated	<ul style="list-style-type: none">• Main battery voltage is below 10.5 volts• Discharged battery• Insufficient battery connection• Failed supply fuse
MPP - illuminated	<ul style="list-style-type: none">• CC Charging
MPP - short flashing	<ul style="list-style-type: none">• CC ready to charge
>80% - illuminated	<ul style="list-style-type: none">• Main battery is almost fully charged
>80% - flashing 1 pulse/sec	<ul style="list-style-type: none">• CC over-heated
>80% - flashing 2 pulse/sec	<ul style="list-style-type: none">• Main Battery or solar panel overvoltage
Batt Full - illuminated	<ul style="list-style-type: none">• Battery (batteries) are fully charged
All LED flashing	<ul style="list-style-type: none">• Battery selection is incorrect

Maintenance



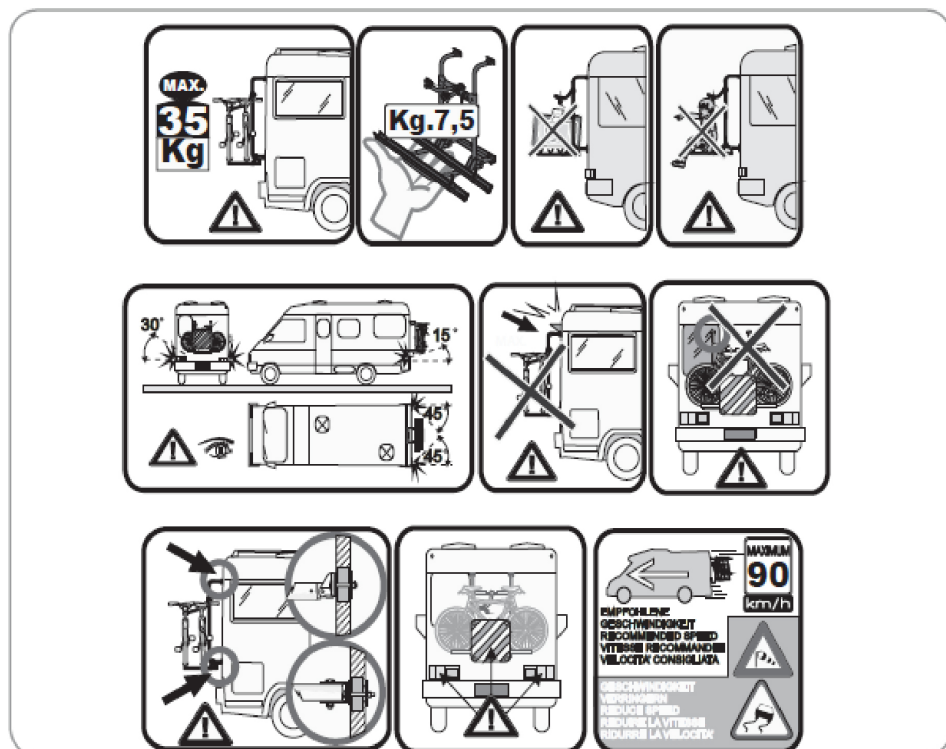
The power supply must always be disconnected before performing any maintenance work. A competent person must first switch off any central control (power distribution) device and remove the charge controller supply fuse OR cover the solar panels to prevent power generation.

Clean the device with a dry and lint-free cloth.

Bike Rack – (Xplore)

- The Carry-Bike Caravan Universal is a bicycle carrier for caravan that carries 2 bicycles, which should not exceed the total weight of 35kg.
- Fasten the Carry-Bike to the rear bearing structure of the vehicle.
- Because it is overhanging structure posteriorly installed, this overhang must be regulated according to the regulations in force. After settling of Carry-Bike on rear axis of the vehicle normal weight's distribution on two axis could be modified; be sure that it doesn't exceed the maximum permissible load (verify the data on your own logbook).
- All-up weight of the vehicle has to be always verified in proper equipped area.
- We recommend that the area where the bicycle rack will be mounted be cleaned before installation.
- To avoid excess abrasions on the vehicle's paint, before use check all points that may risk being rubbed when the door is opened (they could be caused by the vehicles' construction tolerances).
- Make sure the that the luggage compartment is always closed.
- Make sure that the support brackets are located where they cannot move or shift sideways. They also must not touch the roof of the vehicle, the hinges and the corresponding bolts or screws.
- Periodically check the bicycle rack to make sure it is firmly attached, especially after the first 10KM.
- Make sure the belts are not loose and that the holding brackets have not shifted.
- Make sure that fastening is secure, during each trip, stop and check that the bicycles are securely fastened after the first short run.
- **DO NOT COVER THE NUMBER PLATE OR LIGHTS.** Repeat lights and plate in case Carry-Bike covers them, even partially.
- Do not hide Carry-Bike with covers, Detachable parts like child safety seats, bags or air compressor have to be uncoupled and put away inside the vehicle. Bicycles have to be fixed both with two Quick-Safe (one piece per wheel) and Security Strip (Bike-Block) on the frame. Both Quick-Safe and Security Strip have to be periodically controlled. In case of damage, they have to be immediately replaced. While fixing the bikes, verify that there is enough distance between handlebars and/or pedals and vehicle's wall, to avoid to compromise the painting.
- In the case of a long period of disuse, we suggest that you unhook the bike carrier.
- The load must be evenly distributed and must not exceed the maximum width of the vehicle.
- Be careful when driving and beware of gusts of wind. Also keep in mind that you need a longer braking distance. Pay attention to dangerous road crossing and garage's entrance. Addition rear view mirrors are required in case of reduced visibility.
- In some cases, the bicycle rack interferes with the using the rear windscreen wiper. Carefully examine the brush radius before turning on rear wiper.
- **IN CASE OF USE OF THE BIKE CARRIER WITH TOW MAKE SURE THAT THE TOW HOOK IS ALWAYS ACCESSIBLE AND THE CORNER MOBILITY OF THE TOW IS GUARANTEED (VOLUME MEASURING DIN 74058).**
- FIAMMA – is not liable for damages arising from non-observance of the laws in force, the installation, carriage and maintenance instructions or from incorrect use of the bike carrier.

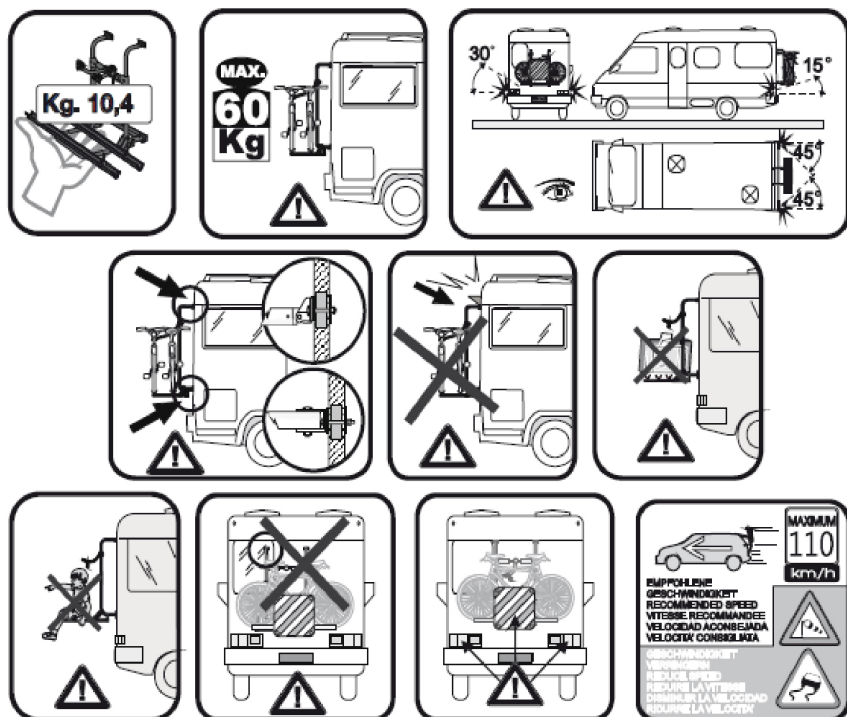
HOW TO USE YOUR CARAVAN'S EQUIPMENT



Bike Rack – (Where fitted)

- The Carry-Bike Pro E-Bike is an universal bicycle carrier for vehicles with flat rear walls available. It is supplied with Bike-Block Pro S blocking system and Rail Quick Premium, it is standard delivered for the transport of 2 bicycles. Do not to exceed the max. Weight of 60 kg.
- If you exceed the maximum permitted weight, the braking distance of your vehicle will be increased. Check before you leave.
- Setting the Carry-Bike on rear axis of the vehicle, the standard weight distribution on two axis could be modified; be sure that it doesn't exceed the maximum permitted load (verify the data on your own logbook).
- Never exceed the maximum permitted length and the total weight of the full load vehicle.
- Do not cover the number plate or lights. Repeat lights and plate in case the Carry-Bike covers them, even partially.
- Before installation, clean carefully the area where the bicycle rack will be mounted and use rubber protections in order to avoid any friction, and, consequently any damages to the body/paint of the vehicle. Periodically check rubber parts and, in case they are porous or worn, immediately replace them. If not used for long periods, we suggest to remove the Carry-Bike from the vehicle.
- Make sure that the support brackets are located where they cannot move or shift sideways. They also must not touch the roof of the vehicle, the hinges and the corresponding bolts or screws.
- Periodically check the bicycle rack to make sure its firmly attached, especially during the first 10km. Make sure the belts are not loose and that the holding brackets have not shifted.
- In case you use the bike cover, pay attention that it is duly fixed and does not cover the lights. Detachable parts like child safety seats, bags or air compressor have to be uncoupled and put away inside the vehicle.
- Bicycles have to be fixed both with two Quick-Safe (one piece per wheel) and Security Strip on the frame. Both Quick-Safe and Security Strip have to be periodically checked. In case of damage, they have to be immediately replaced.
- For extra safety travelling, we suggest using steel cable antitheft device.
- While fixing the bikes, verify that there is enough distance between handlebars and/or pedals and vehicle's wall, to avoid compromising the painting.
- Do not exceed the maximum weight allowed.
- The load must be evenly distributed (the heaviest bike must be places near the wall of the vehicle) and must not exceed the maximum width of vehicle.
- Be careful when driving and beware of hairpin bends and of gusts of wind. Also keep in mind that you need longer braking distance. Beware dangerous road crossings and garage's entrance. Additional rear view mirrors are required in case of reduced visibility.

HOW TO USE YOUR CARAVAN'S EQUIPMENT



SECURITY

Theft deterrent, prevention and security of your touring caravan is taken very seriously at Erwin Hymer Group UK. That is why we have provided a combination of standard features and optional extras designed to deter and prevent thieves from stealing your property.

And in the unlikely event that they should succeed, aid the identification, speedy recovery of your property and assist in the prosecution of the thief.

Caravan Theft

The theft of a caravan can occur in the most unlikely circumstances; from a motorway service area, even from an owner's driveway. Secure all windows and doors when your caravan is unoccupied, even if only for a short length of time.

Tracker Retrieve

Your caravan can have Tracker fitted as an option.

If you have had the Tracker fitted as an option, then a registration card with the Tracker details should be within your document wallet supplied with your caravan. We would recommend that this card is not kept in the caravan. To ensure the Tracker is registered, follow the instructions below.

Your dealer may have registered the caravan with TRACKER and confirmation sent to you via email.

If it has not been registered you can easily do it yourself.

Open the TRACKER registration portal at www.tracker.co.uk/elddis

TRACKER VLU and Caravan VIN

Numbers are matched and confirmed with the vehicle model

Enter Dealership name from dropdown menu
Enter customer details including email address

A confirmation email will be sent to the customer and a one year subscription will begin

TRACKER will contact customer towards the end of the one year subscription period with the options available.

or call TRACKER directly on 0845 604 6029

CRIS - THE CENTRAL REGISTRATION AND IDENTIFICATION SCHEME

CRiS is the Central Registration & Identification Scheme that issues touring caravan registration documents, equivalent to that of the V5 registration document issued by the DVLA for cars. CRiS was established in 1992 by The NCC and provides a method of registering the 'keeper' details of every tourer manufactured by NCC member companies to help prevent and detect caravan related crime.

Why register with CRiS?

- Safety
- Security
- Warranty

Did you know?

- You should not take a tourer abroad without a registration document. If you go abroad your CRiS registration certificate provides the necessary proof, required by the police and other authorities, that you are its registered keeper.
- If you need to make a claim on your insurance, CRiS can help speed up claims by providing details of your tourer and its purchase date to relevant parties.
- CRiS can help your tourer's manufacturer contact you in the event that there is any kind of product recall or fault that could affect the safety of your caravan.

For help, support and advice contact CRiS:NCC

CRiS Ltd
PO Box 445
Aldershot
GU11 9FS

Tel: 0203 282 1000

www.cris.co.uk

AL-KO SECURE WHEEL LOCK (Option)

You must register your key, should this you will not be able to obtain a lost or stolen key.

This is how it works:

- On the Al-Ko Secure registration card you will find an exclusive security number.
- Please register your key by telephoning 0870 7576788 or 0044 1926 818500.
- You will be required to provide the chassis number of the caravan.
- You will need to provide us with a password and supply answers to three security questions.
- Make a note of your password and keep it in a safe place.
- Also keep your registration card safe.
- Take your registration card with you when you are travelling with the caravan.
- Always keep your registration card separate from the lock.

Safety Information

- Always secure the caravan against movement (chock the wheels, couple to towing vehicle).
- Never leave Secure parts (key, locking bolt, registration card) in the caravan.
- Always remove Al-Ko Secure before removing the caravan.
- After any attempt at theft has been made on a locked Al-Ko Secure, the caravan must be inspected in an Al-Ko Approved Service Workshop.
- Always keep the key in a safe place.
- Keep the lock set and registration card separate from the keys.
- The lock parts and key do not have a registration number, therefore keep the registration card in a safe place.
- Caravans with twin axles have two locks, keep each lock set in a separate place. The sets are not interchangeable!

Note: Read the operating instructions and act in accordance with them. Keep the operating instructions for general use. Follow the safety instructions as well as the warning information.

ASSEMBLY

We recommend the use of a side-lift jack for easier fitting of Al-Ko Secure when used on a twin axle caravan. (Order No. Al-Ko Jack Set 1389235).

- Align the wheel so that the receiver can be seen in the centre of the rim opening. DO NOT use the rim opening in which the tyre valve is fitted. (Fig. 1)
- Unscrew the plastic cap from the receiver and store in the tool kit box. (When Al-Ko Secure is not in use, always screw the plastic cap in place). (Fig. 2)
- Insert the locking bolt into the rim specific insert. (Fig. 3)
- Insert the locking bolt socket key. (Fig. 4)
- Line up the locking bolts and assemble with the receiver. (Fig. 5)
- Tighten the locking bolt socket using the wheel spanner provided (or ratchet as shown) to wheel torque. (Fig. 6)
- Remove the locking bolt socket key. (Fig. 7)
- Insert barrel lock. (Fig. 8)
- Hold the lock fast and lock. (Fig. 9)
- The Al-Ko Secure is now fitted. (Fig. 10)

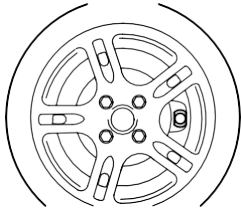


Fig. 1

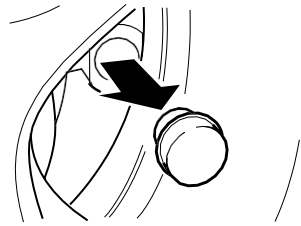


Fig. 2

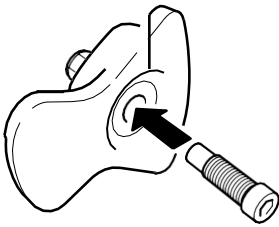


Fig. 3

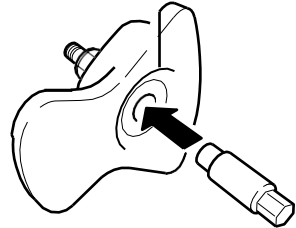


Fig. 4

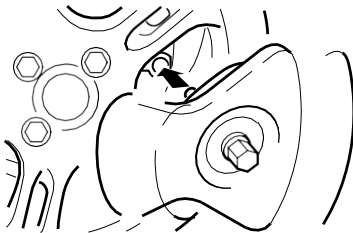


Fig. 5

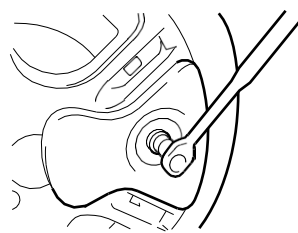


Fig. 6

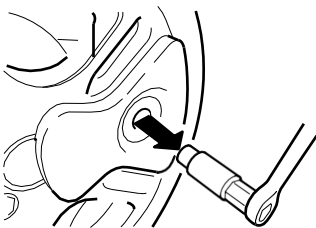


Fig. 7

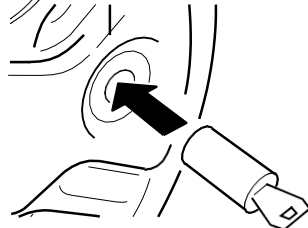


Fig. 8



Fig. 9

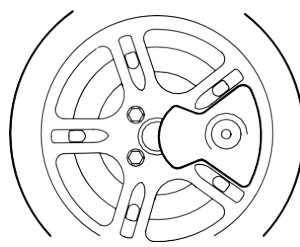
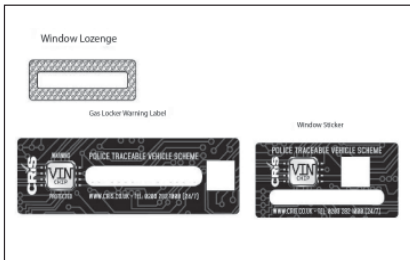


Fig. 10

WINDOW & CHASSIS MARKING



Your Touring Caravan Registration Document will include a 17 character VIN (Vehicle Identification Number), shown in the top righthand corner. This 17 character VIN will be die-stamped into the caravan chassis with a tamper evident label in the gas locker and a maximum of 10 tamper evident labels placed on the inside of all windows (with the exception of opaque windows). To protect yourself and your touring caravan, never leave the Registration Document in the caravan. For security reasons keep it in a safe place.

If you sell the caravan please follow the instructions on the Touring Caravan Registration Document.

Please note: If you do not receive a Touring Caravan Registration Document, lose it, or any of the details recorded are incorrect, please contact: CRIS - PO Box 445, Aldershot GU11 9FS. Telephone: 0203 2821000.

Spare windows labels can be found in your owners information pack for use if you ever need to order a replacement window.

ELECTRONIC TAGGING

In conjunction with the CriS registration scheme, all touring caravans are electronically tagged during manufacture for added security and to ease vehicle identification. The security tag containing the individual identity of your caravan is concealed within the caravan body and can only be read by using a special decoder.

Please Note: Your Local Police Can Obtain The Use Of A Decoder By Contacting C.R.I.S. on Telephone No. 0203 2821000.

ADDITIONAL SECURITY

Consider fitting any device which might deter or prevent intrusion by thieves. For example: A wheel lock will prevent towing of the caravan and removal of the wheel.

FREE CRIME PREVENTION advice about securing your caravan, protecting your valuables, property marking, either at home or whilst on site, can be obtained from the Crime Prevention Officer through your local Police Station.

CARE OF YOUR CARAVAN

This section of the guide is devoted to the care, cleaning and general preservation of your caravan in order to retain its showroom condition.

EXTERIOR CLEANING

Cleaning recommendations

Regular cleaning must be carried out to maintain the lifespan of the product. The outer surfaces should be cleaned by hand using cold water to remove any embedded dirt, then use suitable proprietary caravan or car cleaning products in accordance with the manufacturers recommendations.

All heavily soiled areas of grease or oil smeared surfaces should be washed or wiped off immediately. Drying can be done naturally or with a soft clean cloth.

General Cleaning

Do not use a pressure washer on your vehicle as it can lead to water entering via any of the external vents and could cause damage to the graphics. NO mechanical cleaning aids should be used i.e rotating brushes, scrapers or similar cleaning devices as they will scratch the outer surface of the product. Under NO circumstances should an abrasive or harsh cleaner be used. The use of tree resin remover should be avoided, cleaning agents of this type can lead to stress cracks in the product.

All the adhesives used to seal exterior components are mould resistant but not mould proof. In order to ensure that these adhesive beads are maintained in the best possible condition and that their appearance does not become unduly affected by mould growth, it is recommended that they are regularly washed and cleaned using a suitable proprietary caravan or car cleaning wash product.

User Tip: In general, cleaning agents should be removed from the surface to avoid lasting damage.

WHEELS

Do not use acidic cleaning products on the wheel bolts.

GLASS FIBRE REINFORCED PLASTIC (GRP - WHERE APPLICABLE)

GRP components need to be washed, waxed and taken care of. Chemicals and dirt can collect during storage, and the gel coat can be stained or marked when chemicals combine with rain or dew. Most stains or marks can be removed with Blue Diamond Black Streak remover, but more stubborn marks may require a (fine grit) rubbing compound such as Farcela G3.

To help keep your GRP components looking almost like new, it is wise to wash the parts monthly (or more frequently) using suitable proprietary caravan or car cleaning products, but avoid using strong alkaline (e.g. trisodium phosphate) or acidic cleaners or abrasives. Waxing the components once or twice a year with a good grade paste wax will help to maintain the colour and finish.

ACRYLIC WINDOWS

Your caravan is fitted with shatter resistant acrylic windows. To preserve their clarity and unblemished transparency it is essential that the following cleaning instructions are strictly adhered to: Road grit, dust, sand, flies, bird droppings etc., should be washed off using plenty of cold water do not use a sponge to clean off heavy dirt deposits. Any remaining dirt should be washed off using a soft cloth and warm water.

Please note: Under NO circumstances should any abrasive cleaning agents, household detergents or proprietary cleaning fluids be used. Wash the window again using only cold water and dry off with chamois leather.

Please note: Should scratches appear on the acrylic windows these can often be removed with an acrylic polish. Gentle polishing with a liquid metal polish, i.e. Brasso may also have the desired effect - consult your retailer BEFORE attempting to remove any but the slightest scratch.

WINDOW BLINDS & FLYSCREENS

To clean the blinds and flyscreens, moisten a soft cloth or sponge with a small amount of water and mild soap suds and gently wipe dirt off. Allow to dry before retracting, failure to do this could result in mildew forming.

Pleated blinds where fitted should be cleaned using a soft brush and if necessary hoovered using a soft brush attachment on the device.

Winterisation/Storage

Please note: The blind/flyscreen should not be left in the down position when the caravan is not in use or throughout the winter as the memory of the mechanism may be lost.

ABS - A FRAME COVER, WHEEL SPATS & PANELS

To preserve the appearance of all ABS panels and fittings road grit, dust, sand, flies, bird droppings etc., should be washed off using plenty of cold water. Any remaining dirt should be washed off using a soft cloth and warm water. Under NO circumstances should any abrasive cleaning agents, household detergents or proprietary cleaning fluids be used. Wash the ABS material again using only cold water and dry off.

WARNING: Under no circumstances should alcohol, spirit or solvent-based liquids be used on GRP or ABS plastic panels as these substances may react with the material and cause visible damage.

INTERIOR WALLS

Your caravan interior walls will only require a wipe over with a damp cloth, using soap and water to keep them in a 'showroom' condition.

FURNITURE

Treat your caravan furniture as you would the furniture in your home. Polish wood surfaces sparingly with a good quality wax or spray polish. Use a damp cloth to clean melamine laminated surfaces.

COOKING EQUIPMENT

All parts should be cleaned using warm soapy water. Do not use abrasive cleaners, steel wool or cleansing powders. When cleaning the burner ring it is essential to ensure the holes in the burner do not become blocked. The control knobs are a push fit and can be removed for cleaning.

SOFT FURNISHINGS

Taking care of your upholstery:

You may find your upholstery a little firm at first, this is perfectly normal as all foam and filling composites will naturally soften in time. This softening does not constitute as a fault under the warranty. Fabrics with a pile may appear to have a difference in shades, this is due to the direction of the pile and how the light reflects. This is not a fault but a part of the charm of the fabrics. Regular care with a soft brush will ease the pile back and reduce the effect of the pile being flattened over time. Fabric will stretch, move and develop creases or wrinkles during use, these are expected and are completely normal during the lifetime of the product. It is important that all cushions and upholstery are regularly "dressed". To do this, the cushions and upholstery require 'plumping' to ensure they revert to their original shape. Without "dressing" and "smoothing" the cushions it could give the appearance of flat or miss shaped, making the fabric appear loose or baggy. This is not a defect but part of the care of the product/s. Please ensure all cushions/upholstery are always placed in the correct position during use. It is recommended that the curtains in your leisure vehicle are washed on a delicate cycle at 30°C. This will not damage the clip glides. Shrinkage may be caused should you decide to dry clean your curtains.

Note: Curtains should not be left closed during daytime hours otherwise some fading may occur.

Taking care of your carpets (Where fitted):

Soiling (dirt, dust and abrasive matter) is the greatest threat to carpet. Door mats should be cleaned frequently to prevent them from becoming a source of soiling. The best way to increase the life of your carpet is to vacuum regularly. For general cleaning use adry shampoo following the products instructions. Spills are likely to happen and if you treat spots and stains immediately, they will be easier to remove. Certain products can cause irreparable damage to your carpet. Bleaches, tile cleaners, mildew removers, oven cleaners, etc can have strong chemicals which discolour or dissolve carpet fibres. Blot liquids with a dry, white, absorbent cloth or plain white paper towel. To prevent the spill from spreading, please work from the edge of the spot to the centre. For food and other non-liquids, start by gently scraping up with a spoon or knife blade and vacuum until completely removed.

Note: Do not get the carpet too wet. Wetting through to the backing may result in shrinkage, discoloration, odour and delaminating.

WINTERISATION AND STORAGE

Mattresses are made from fire retardant fabric and foam. Remove upholstery from the caravan and store somewhere dry and well ventilated. If upholstery is being left in situ store in an upright position away from the caravan walls, this will help air to circulate and prevent mildew occurring.

To aid air circulation leave fixed beds in the open position.

Try to keep your cushions away from direct sunlight.

Curtains:

Please seek manufacturers instructions for washing information.

Shrinkage may be caused should you decide to dry clean your curtains.

Curtains should not be left closed during daytime otherwise some fading will be experienced.

SHOWER TRAYS, SHOWER ROOM AND WASH BASIN FITTINGS

Only clean your shower tray using soap and water. **Do not use** chemical based cleaning agents as this will attack the material.

CLEANING OF ALL TAPS

It is recommended that a non-abrasive damp cloth be used for cleaning the taps and showers.

Cleaning instructions for all chrome and black plated products – (taps, wastes, bathroom accessories, etc.)

Alcohol, solvents and solid detergents, liquids containing acid or aggressive solutions, anti-calcareous products, abrasive sponges or steel wool should absolutely be avoided since they could corrode in an irreparable way the outer surface of the products.

WATER CONTAINERS

- (i) All water remaining in any water container should be disposed of so that the container is empty.
- (ii) The outside of external water containers should be thoroughly cleansed and washed down to remove any dirt, dust or other contaminant. Water at a suitably hot temperature containing an appropriate detergent is recommended for this purpose. Water should then be put into the container, swirled round, then emptied out.
- (iii) All containers should then be totally filled with water containing an appropriate disinfectant / sterilising solution and allowed to stand for the recommended contact time.
- (iv) The solution should be emptied from the container.
- (v) The opening of any container should be cleaned thoroughly with an appropriate pre-prepared wipe impregnated with a disinfectant / sterilising solution.
- (vi) External containers should be inverted whilst stored overnight (if possible).
- (vii) Containers must be filled with mains water only and mains water only should be used for the above cleaning procedure.
- (viii) On no account should garden hoses be used to fill water tanks.

WATER SYSTEMS - STERILISATION

Clean the water system at the start and end of the season with sterilising fluid.

Please Note: It is recommended that for this operation the filter is removed as the fluid reduces the effectiveness of a new filter.

- (i) Drain down the system. (Open all taps to allow air in, enabling the system to drain quickly). Including water heater drain tap.
- (ii) Remove any water filters fitted, and replace with a short length of hose or empty filter cartridge (this will ensure the filter is not affected by the disinfectant / sterilising solution).
- (iii) Fill the system by using the pump with a disinfectant / sterilising solution. (Check

that the solution at full strength appears at all taps/showers). Allow to stand for the recommended period of time.

- (iv) Drain the system down completely.
- (v) Thoroughly clean the outside of all taps/connectors with a cloth soaked in the disinfectant / sterilising solution.
- (vi) Flush the system through with clean drinking water until no traces of disinfectant / sterilising solution can be detected at any tap.
- (vii) After sterilising the system at the start of the season it is recommended that a new inline water filter cartridge be fitted. (Located on the cold feed to the kitchen tap).

Please note: Suitable sterilising chemicals are available from your Erwin Hymer Group UK Retailer, accessory shop, chemists, or home-brew shops. It is not, however, recommended to use bleach or sodium metabisulphite.

THETFORD TOILET

WARNINGS

- **Cold Weather Use - to prevent freezing during cold weather use, add antifreeze to the toilet system fresh water tank. Use a non-toxic (propylene glycol) type of antifreeze. Refer to chart on container to obtain level of protection.**
- **Warmer weather or longer intervals between emptying the waste tank may require additional toilet fluid. Use only Thetford toilet fluid to achieve the best results.**

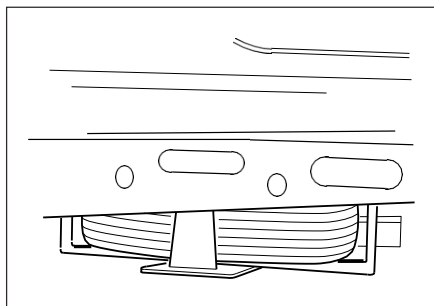
CAUTIONS

- Never add toilet fluid directly into toilet bowl.
- Do not use strong household detergents or cleaners that contain chlorine, solvents or acid contents.
- High Altitude and Hot Weather Use - with large temperature differences and changing heights during towing, over pressure can start to build up in the waste holding tank, causing contents to splash upward upon opening the valve blade if opened too fast.

CHASSIS MOUNTED SPARE WHEELCARRIER

To gain access to your spare wheel lift the spare wheel carrier up and lift up the locking mechanism. Then move the mechanism to the horizontal position and the spare wheel carrier will be free to move over the mechanism and allow the spare wheel to drop to the floor to be removed.

To replace the spare wheel simply reverse the operation making sure that the quick release mechanism has been fully pushed down to create a positive lock. The carrier is of extra strong, lightweight construction and zinc plated for all weather protection. It is easy to fit and accepts all conventional wheel sizes.



Tyres & Tyre Pressures

Please refer to the Technical Specifications pack that is provided with the vehicle for information regarding tyre pressures and tyre sizes. It is dangerous to drive with under inflated tyres. Pressure checks, including those on the spare tyre, should be carried out whilst the tyres are cold using an accurate pressure gauge. These checks should be carried out before each journey and at regular intervals during storage.

Tyre Wear and Damage

The legal requirements for tread depth on motor vehicle tyres apply also to caravans. A redundant tyre must be replaced by one of the same size and load index. Wheels should be changed round occasionally to equal wear and prolong the life of the tyres. A tyre should be renewed if a blister, rupture or cut

exposing the casing is detected. If the tyre has suffered a violent impact e.g. against a kerb, it should be examined by a specialist as soon as possible.

CHANGING A WHEEL

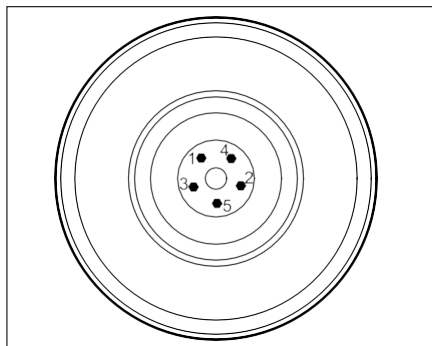
Whenever road wheels are removed and re-fitted, they must be tightened using a calibrated Torque Wrench set to 102Nm for steel wheels and 130Nm for alloy wheels.

Only use the wheel bolts supplied with your caravan. If you need to replace these bolts you should obtain bolts from an approved Erwin Hymer Group UK Retailer.

The bolt fixings should be tightened in the sequence shown in the diagram below. Do NOT simply tighten clockwise or anti clockwise. Remember to over tighten is just as dangerous as to under-tighten, as this can distort the wheel rims. Avoid the use of power wrenches. Wheel bolts should NEVER be lubricated.

Alloy wheel bolts can be used to fit the steel wheel until the alloy wheel is ready for refitting.

Never use steel wheel bolts to fit an Alloy wheel.



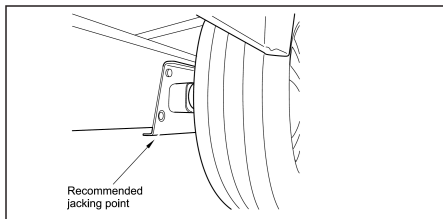
The corner steadies must not be used to jack up the caravan. They can be lowered to touch the ground only as a safety measure to stabilise the caravan.

- (i) Apply the handbrake fully as for parking. Do not forget to give the caravan a slight rearwards push to stop the reversing lever collapsing.

- (ii) Slacken off the wheel bolts on the wheel to be changed.
- (iii) Ensure all corner steadies are in the up position before commencing jacking of the caravan.
- (iv) With a suitable jack, jack up the caravan under either the axle tube, the axle mounting plate or designated jacking point.

Please note: Do Not Use The Chassis As A Jacking Point. If there is lack of ground clearance because of a flat tyre, gently move the caravan onto some ramping boards.

- (v) Support the weight of the caravan with the jack and for added safety lower the front and rear corner steadies on the side of the flat tyre. Then remove the ramping boards.
- (vi) Remove the wheel bolts and remove the wheel.
- (vii) Before fitting the wheel, examine it for distortion or other damage. Ensure that all mating surfaces are clean and dry, including bolt/nut seats.



Please note: Always Use the Correct Bolts to Secure the Wheel - Check with the dealer if unsure.

Please note: A corner steady brace is not to be used for the next step.

- (viii) Insert the wheel bolts.
- (ix) After the bolts have been screwed in as far as possible by hand, each bolt should be tightened gradually in sequence. Do not over tighten at this point as the final tightening should be done with a calibrated torque wrench. The wheels of the caravan will not rotate during tightening as they are held rigid by the wheel hub brake unit.

- (x) Raise the corner steadies.
- (xi) Lower the caravan to the ground.
- (xii) The wheel bolts should be tightened ensuring that the torque is applied evenly around the wheel. Using a suitable torque wrench, sequentially tighten the steel bolts to a torque of 102Nm for steel wheels and 130Nm for alloy wheels following the sequence stated above.

IMPORTANT

- **The torque settings should be re-checked after 50 km (30 miles).**
- **Do not use acidic cleaning product on the wheel bolts.**
- **Do not loosen the wheel bolts to carry out this operation whilst the road wheel is supporting the weight of the caravan.**
- **Wheel bolts should NEVER be lubricated.**
- **NB: If you upgrade from steel to alloy wheels you must ensure you use the correct bolts for the new wheel.**

JACKING

Under no circumstances should the corner steadies be used to jack up the caravan. When it is necessary to jack up, use a bottle, screw, trolley or scissor type jack, one with an axle shaped head is recommended.

Place the jack plate under the axle tube as near as possible to the main longitudinal member. The maximum mass which the jockey wheel and its clamping mechanism are capable of withstanding is as per the technical data sheet provided with the vehicle.

LUBRICATION

- Lubricate the Jockey Wheel spline
- Lightly oil the wheel axle and screwthread.
- Lubricate the Brake Linkage
- Lightly oil all moving parts.
- Lubricate the Corner Steadies
- Lightly oil the screw and pivot pins.

THE ALKO CARAVAN CHASSIS

Chassis members

The recommended tow vehicle coupling height is 350-420mm from the ground to the centre of the ball when the vehicle is fully laden.

Manufactured from high quality steel, the chassis has extra deep sections to provide strength at points of maximum stress. Large elongated holes are punched in the longitudinal and towbar, ('A' frame) members, to reduce weight to a minimum. Each hole incorporates a return flange to maintain the required strength and provide rigidity in the extra deep sections.

The chassis frame is of a bolted construction which, should the need arise, allows replacement of individual parts.

The chassis is Hot Dipped Galvanised. This is regarded as one of the best forms of corrosion protection. It does however require minimal maintenance in certain circumstances.

When new the chassis is of a bright and shining appearance. As the galvanising cures during the initial 2 to 3 month period, this will gradually change to a medium to dark grey colour. This grey finish is the ideal, giving the correct protective coating. During this curing period the surface should be protected to avoid possible wet storage stain, in the form of a soft, light coloured, porous, oxidation layer. If the chassis members are in contact with any salt deposits from roads this should immediately be washed off. Salt attracts moisture allowing the surfaces to remain wet, this prevents curing and also allows formation of wet storage stain.

It is recommended that the chassis be washed on an annual basis (particularly after winter usage) to avoid undesirable build up of salt and dirt deposits.

The galvanised chassis should not be painted or subjected to any other protective treatment.

Should the galvanising become superficially damaged exposing the steel core, this should be cleaned and treated with a cold galvanising spray obtainable from vehicle accessory outlets.

Damage to chassis members through impact etc. must not be straightened or welded.

Damaged chassis members must be replaced.

Drilling or welding of parts or accessories

This chassis is designed and built to precise tolerances and must not be drilled or welded.

Independent suspension

The ALKO rubber suspension consists of three rubber elements are contained within a hexagonal axle tube. These provide suspension and have inherent damping characteristics. (Only the hubs and wheel brakes require attention - see AL-KO booklet provided with your vehicle.)

Coupling head

The ball couplings are entirely automatic in operation and designed for one hand operation to suit the 50mm international ball recommended by the British Standards Institution, National Caravan Council and the Society of Motor Manufacturers and Traders.

Uncoupling

Having lowered the jockey wheel to the ground, operate the handle as previously described. Lift the coupling clear of the towing ball either manually or by operating the telescopic jockey wheel.

Brake drum/hub assembly

The Euro Axle fitted to your caravan comes complete with maintenance-free wheel bearings greased and serviced for life.

Adjustment is not required during the design life of the sealed bearing (100,000 km).

CAUTION: If replacement of the brake drum or shoes is required, this must be carried out by authorised AL-KO Service Centres.

Specialist tools and equipment are required. The rear hexagonal bolt covered by a black plastic cover must NEVER be touched.

Jockey wheel assembly

The Alko Jockey wheel assembly fitted to your product has a maximum nose load. Please refer to your vehicle technical specification for details.

Operating instructions

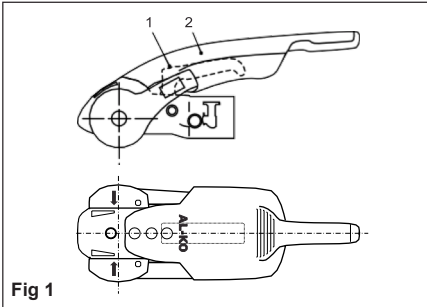


Fig 1
Coupling handle (Fig. 1/Item 1),
StabiliserLever (Fig. 1/Item 2)

The Stabiliser lever (Fig. 2/Item 2) must be in the uppermost position (open).

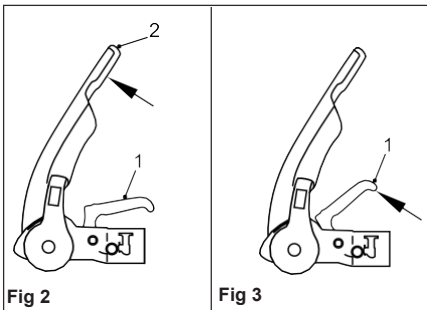


Fig 2

Fig 3

Coupling

- Pull the coupling handle (Fig. 3/Item 1) up in the direction of arrow. The coupling mechanism has an open position ie. as long as the AKS 3004 is not placed on the ball, the handle will remain open. Put the opened coupling onto the clean towball. The handle must now make an audible click and return to the flat position.

WARNING: The coupling is correctly engaged when the green edge of the safety indicator button is visible (Fig. 4/Item 3).

WARNING: Always ensure that the jockey wheel is fully raised and secure before commencing any journey.

Stabiliser Unit:

- To operate the Stabiliser (once coupled to the towball), simple press the stabiliser lever down as far as it will go (Fig. 4/Item 2).

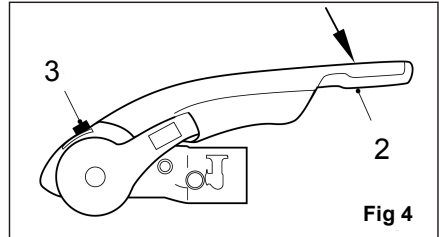


Fig 4

Uncoupling

- Pull the stabiliser lever handle up as far as it will go, open the coupling handle and lift the AKS 3004 from the towball. With larger nose loads, coupling and uncoupling can be made easier by using the jockey wheel to assist lifting.

The friction pads are pressed against the towball and hence generate a stabilising/damping force. These pads are therefore subject to wear over time, however they will have a long service life (circa. 30,000 Miles), provided they are well maintained and kept free of grease/dirt.

Checking the efficiency of the left/right friction pads:

- 1) Couple up AKS 3004
- 2) Open Stabiliser lever (Fig. 5/Item 1).

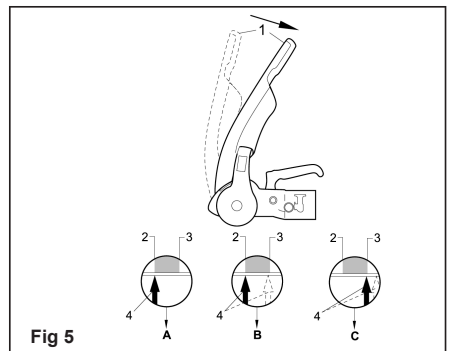


Fig 5

- 3) Close Stabiliser lever until resistance is felt (ie friction pads are in contact with the ball but not yet under pressure).
- 4) If the arrow on the arm (Fig. 5/Item 4) is before or on the marked area (Fig. 5/Item 2) the friction pads are still as new (See A)
- 5) The arrow on the arm should lie between the marked area on the soft dock (See B)
- 6) If the arrow on the plate reaches or passes the marked area on the soft dock then the friction pads need replacing (See C).

It is not necessary to adjust the friction pads

Manoeuvring operation

For easier manoeuvring (on campsites etc), pull the stabiliser lever to the 'up' position.

Please do not use the stabiliser lever as an manoeuvring handle. Please use the handles on the Caravan or fit the AL-KO manoeuvring handle to your jockey wheel (available separately).

- 1) During opening or closing, the AKS must only be operated by one person.
- 2) Press stabiliser lever down by hand force only DO NOT use your foot or an extension bar, this will damage the components (Fig. 6).
- 3) When opening or closing the stabiliser lever, please ensure your hand does not touch the coupling handle - you may accidentally trap your fingers! (Fig. 6).

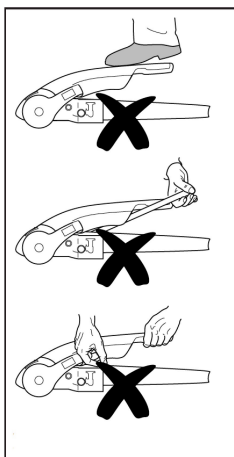


Fig 6

Noises whilst driving

As a rule, the friction pads of the AKS 3004 do not make a noise during driving. Any clicking, creaking or squeaking noises that do arise may be due to the following:

- a) Foreign bodies or dirt between the friction pad and tow ball.
- b) Dry operation of the drawshaft inside the overrun device.
- c) A detachable towball which has too much play in the locking mechanism.

Remedial Action

- a) Clean the tow ball and friction pads by lightly rubbing the surface (100-120 grit emery paper)
- b) Lubricate the drawshaft sleeve via the grease nipples. In addition, push the gaiter forward and grease (DIN 51 825 KTA 3K) the exposed part of the shaft (Fig. 7).
- c) Visit a specialist workshop to have the ball holding area checked for damage and the locking mechanism for function. If necessary, change the towball.

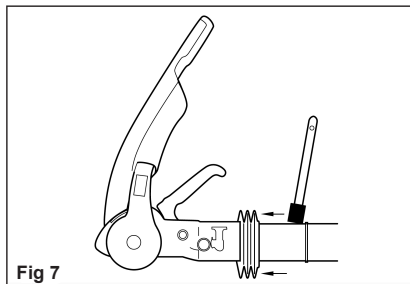


Fig 7

Storing

To reduce the possibility of contamination of component parts of the AKS 3004 the stabilising handle should be closed.

Towing ball

The automobile towing ball should measure 50mm maximum and 49mm minimum diameter (DIN 74058). If the ball is below 49mm diameter it should be replaced immediately.

Overrunning device

The device housing is packed with grease on assembly, but will require periodic maintenance to ensure smooth operation of the braking system.

- 1) Regrease the shaft bearings via the grease nipples provided at 3000 mile intervals, and before storage.
- 2) Ensure correct functioning of all pivot pins and levers and oil regularly.
- 3) Ensure correct functioning of handbrake ratchet and oil regularly.

Braking system adjustment

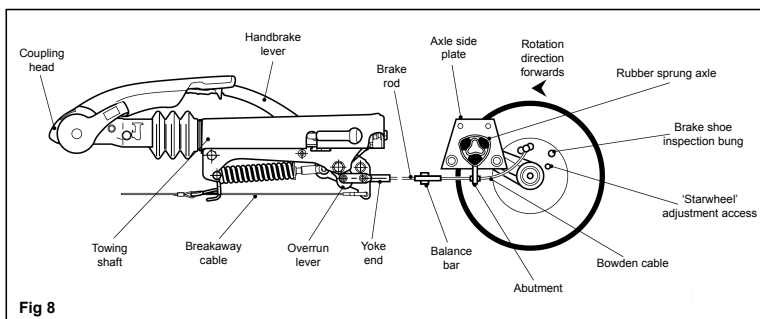


Fig 8

(At 500 miles, then every 3,000 miles or 1 year)

- Ensure the towing shaft with couplingheads is pulled fully forward (Fig. 8).
- Release the handbrake to the fully off position. If the handbrake will not go down the whole way because of the fairing or any other obstruction; then the fairing must be cut away and/or the obstruction removed to achieve this desired position. It will not be possible to set up the braking system properly when the handbrake is not in the fully off position (Fig. 8).
- Jack up one side of the caravan (see Jack Operation Instructions).
- Remove the inner plastic bung from the backplate to expose the 'starwheel' adjuster access (Figs. 8 & 9).
- Always rotating the road wheel in the forward direction - never backwards; adjust the starwheel with a suitable screwdriver, in the direction of the arrow

Jockey wheel

Lubricate wheel and screw thread periodically with grease.

Brake linkage

All moving parts should be lubricated periodically to ensure their satisfactory operation.

Corner steadies

The screw and pivot pins should be lubricated periodically to ensure their satisfactory operation.

embossed on the backplate until there is resistance in the wheel rotation (Fig. 9).

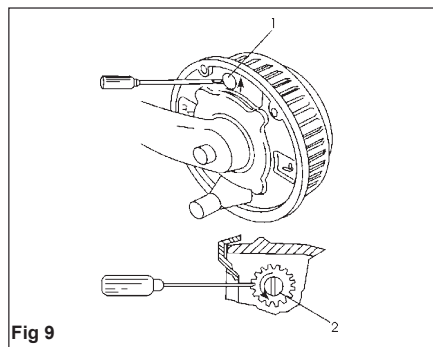


Fig 9

- Slacken off the starwheel adjuster until the road wheel turns freely in the forward direction (Fig. 9).
- Check the adjustment at the end of the brake cable where it is secured to the abutment (bracket) welded to the centre of the axle. When the inner cable

is pulled out it should extend between 5 and 8 mm (Fig. 8). (On tandem axles a double abutment is fitted to the front axle only).

- Repeat for other wheel or wheels.
- On tandem axles the brake cables from the rear axle should pass over this axle and cross over each other before being connected to the abutment on the front axle.
- Ensure the balance bar (compensation) is being pulled evenly. This bar (double on tandem axles) should always be paralleled with the axle tube when pulled (Figs. 8 & 10). Adjust M8 lock and ball nuts, if necessary, to achieve correct parallel position (Fig. 10).
- Check the brake rod support bracket, (fixed to the floor) is supporting the brake rod evenly. The brake rod must always run straight, never bent or curved under any fittings. On tandem axles, using the double balance bar, a brake rod support tube (Part No. 228827) must always be fitted on the end of the brake rod, passing through the centre aperture on the abutment.
- Remove the slack in the brake rod by adjusting the long ball nut, rear of the balance bar, ensuring the overrun lever makes contact with the end of the towing shaft.
- Over adjustment to the long ball nut (Fig 10), could induce movement of the inner brake cable, reducing the effective clearance of the brake shoes. If the overrun lever will not make contact, it is possible the two lock nuts, forward of the spring cylinder, are incorrectly adjusted. Loosen the nuts and adjust the brake rod as above (Figs 8 & 10).
- Adjust the two locking nuts, forward of the spring cylinder (Fig. 10), (on some chassis a single Nyloc nut is used) to

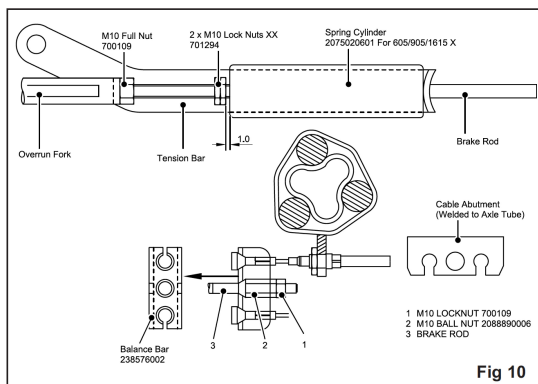


Fig 10

give 1mm of clearance on the spring cylinder. This cylinder (the energy store for the handbrake operation) must be able to rotate only, not slide on the brakero d.

(See Fig. 10). If the overrun assembly is fitted with a gas strut handbrake then no spring cylinder is fitted - therefore ignore this paragraph).

- Correct adjustment of the linkage is checked by operating the handbrake lever so that when the second or third tooth is engaged, a slight braking force is felt on the road wheels.
- Over adjustment of either the wheel brakes or linkage, will result in difficult reversing causing the wheels to 'lock-up'.
- When parking, the handbrake lever must always be engaged into the fully upright position (90°). This is to compress the spring within the spring cylinder and thereby create an energy store, which will automatically engage the brakes further should the caravan move.

If difficulty is experienced in this operation, try easing the caravan backwards with one hand while engaging the handbrake fully with the other. This manoeuvre should not be attempted on areas facing slope. In this case wheel chocks should be used combined with the handbrake.

- Finally, if the alloy road wheels have been removed, re-tighten using a calibrated Torque Wrench to 130 Nm (Newton Metres) (96 lb-ft) - on all M12 wheel bolts - in sequence, i.e. North, South, East, West not clock or anticlockwise.

WARNING: The torque settings should be rechecked after 50km / 30 miles. Wheel bolts should never be lubricated.

In order to operate the ALKO braking system correctly adequate traction of caravan wheels is required when reversing. Therefore surface conditions that would result in a lack of traction should be avoided. Example: Peas, shingle/loose gravel.

Care should be taken when traversing ramps or other obstacles in order to prevent damage to the caravan under gear. When approaching such obstacles reduce towing speed appropriately.

Chassis Lubrication Points

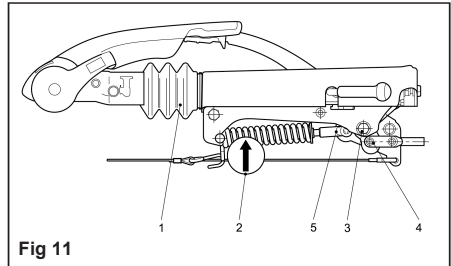


Fig 11

1. Grease the drawbar in the area of the bellows.
2. Grease the bearing bush through the grease nipples on the housing and the cartridge.
3. Grease the pivot bolt of the overrun lever and handbrake levers through the grease nipple.
4. Grease the joint of the brake rod and fitting.
5. Oil the joints of the spring cylinder in the handbrake lever.

Lubricant type: Multi-purpose grease to DIN 51825 KTA 3K4.

General

Information in this handbook relating to inspection and maintenance is referenced from Liquid Gas UK, Code of Practice 32 – 2020.

The maintenance of an installation after commissioning is the duty of a suitably trained and qualified person.

Periodic Inspection and Maintenance of the LPG system and appliances

- Caravan owners shall undertake steps to ensure that existing caravans fitted with LPG appliances, and the associated pipework, are maintained in a safe condition.
- It is also essential for safety to maintain the gas tightness of the installation pipework and appliances.
- Any redundant pipework shall be made safe, and where practicable disconnected and removed. Any redundant pipework that has not been removed shall be isolated, and any open end sealed with an appropriate fitting.
- Flexible pipework connections, including assemblies, should be routinely inspected, and replaced as needed (it is recommended that hoses are changed at or before they are 10 years old). These connections should not be used if any signs of physical damage, environmental degradation, or service failure are detected during inspection. The inspection process should cover:
 - o Physical damage: This includes cuts, abrasion, cracking, stretching, flattening, kinking, missing or worn sealing washers, damaged cylinder connections, and rodent attacks.
 - o Environmental deterioration: Look for stiffening, cracking, delamination of the outer covering, and chemical degradation, such as softening of the outer coating due to contact with oil.
 - o Service failure: Be alert for blistering, soft spots, rupture, and issues with preassembled end fittings, such as corrosion or loosening of swaged fittings that connect the hose.

Note - Any identified defects must be repaired by a suitably trained and qualified person.

It is a statutory requirement in Great Britain, the Isle of Man, Northern Ireland and Guernsey that all “gas work” (on installations within the scope of the Gas Safety (Installation and Use) Regulations) must be carried out by a business or self-employed person(s) that is a member of a “class of persons” registered with a registration body which has been approved by an approval body to operate and maintain such a register.

STORAGE

LONG TERM & WINTER STORAGE

If the caravan is to be stored for any length of time, especially over the winter period, the following operations are recommended:

- (i) Ensure all windows, roof lights, habitation and exterior locker doors are closed firmly and locked.
- (ii) Remove all soft furnishings which could be affected by damp conditions.
- (iii) Clean the caravan inside and out as detailed in the previous section.
- (iv) Drain the water system.
- (v) For winter storage and to prevent frost damage all taps must be left in open position. For those caravans with lift up taps please ensure the taps are left in the central position.
- (vi) All blinds and flyscreens should be left in the retracted position. Check all fixed ventilation apertures are not obstructed.
- (vii) Ensure that the refrigerator/freezer compartment doors are left open during storage.
- (viii) Check that the site you have chosen to store the caravan is open, fairly high and dry and if possible not exposed to gales etc. If this proves impossible it is recommended that the caravan chassis is anchored to the ground.
- (ix) Jack up the caravan (use bottle or screw jack, do NOT use the corner steadies) so that the wheels are clear of the ground.
- (x) Support the caravan axle with wooden blocks, axle stands or similar so that when the jacks are removed the wheels remain clear of the ground. Lower the corner steadies to level the caravan. Cover the tyres to prevent deterioration. Release the handbrake.
- (xi) Security: Lowering the corner steadies and removing the wheels will reduce the risk of caravan theft.
- (xii) The hitch head should be checked to see that it is fully extended and that there is no load on the braking system.

- (xiii) It is recommended that you use a suitable dehumidifier or place a bowl of salt within your caravan to absorb any moisture during the winter months.

CARAVAN COVERS

Caravan covers may be used to protect your new caravan provided that the cover used is of a breathable type.

Lower the TV antenna and ensure the cover is well tied down to avoid the cover being punctured.

Your caravan must be ventilated every 4 to 6 weeks if it is to be stored with a cover in place.

BATTERY MAINTENANCE STORAGE

Ensure that the leisure battery is fully charged before placing the vehicle into storage.

Once in storage. Check the battery state every 2 months, if the terminal voltage drops below 12.07V then re-charging is necessary.

Charging should be carried out in a cool, dry, well ventilated area.

Do not place the battery onto cold surfaces such as concrete as this will affect the battery's ability to charge.

This will depend on your leisure battery's capacity, age and state of charge.

Should the caravan be stored for a prolonged period of time it is strongly recommended that the caravan is fully serviced before the commencement of use. Your retailer will ensure that your caravan is safe, secure and ready for your enjoyment.

CARAVAN WARRANTY COVER

Introduction

At Erwin Hymer Group UK we are confident that our new caravans are engineered using the latest manufacturing techniques and advanced materials technology ensuring that, when buying one of our products, you are buying the very best. We extend this philosophy to our customers by offering long term peace of mind and reassurance through our extensive warranty cover.

Your warranty cover commences on the day your new caravan is purchased and comprises two key elements:

1. Three year manufacturer's warranty
2. Ten year body integrity warranty

Scope

This applies to all new products and is a guide intended to give a brief overview of the warranty terms applicable to your vehicle.

Conditions of use

Your new caravan has been designed as a leisure vehicle only and the warranty will not be given if the vehicle is used under the following circumstances.

- Used as a permanent residence
- Towed with a commercial vehicle with a gross weight in excess of 3500kgs
- Used for racing or time trials
- Damage resulting from freezing, accident or fire damage

Exclusions

- No liability will be accepted for fair wear and tear, including mould or discolouration of adhesive. Damage including rodent damage, wilful damage or negligence from abnormal working conditions will not be covered.
- Condensation is not covered under the warranty agreement.

Three year manufacturer's warranty

Year 1 warranty - Covers all original components, forming part of the original product specification including plastic front and rear panels, excluding normal wear and tear e.g. tyres

Year 2 and 3 warranty – Covers all original components, forming part of the original product specification, excluding the following items:

- Normal wear and tear and servicable components
- Microwaves
- Batteries
- Windows and glass
- All soft furnishings including mattresses (2-year warranty cover)
- Entertainment equipment
- LED lights
- All internal and external plastic products excluding front and rear panels.
- Adjustments
- Serviceable chassis parts
- Ironmongery and corrosion of metallic components
- Electrical connections
- Floor coverings

We would recommend that customers have their vehicle serviced on or before the due date to ensure that all warrantable parts are identified before the expiry of the component.

Ten year body integrity warranty

Erwin Hymer Group UK products are covered against water ingress manufacturing defects for 10 years from the original date of purchase of a new product. (6 years for subsequent owners from the 1st owners original date of purchase).

Reporting a fault

In the unlikely event that you experience a problem with your caravan please contact your retailer.

It is with the retailer that your contract of sale exists and consequently they have the responsibility to ensure any complaints and warranty issues are addressed. Any Erwin Hymer Group UK approved Retailer / Service Centre are able to undertake any warrantable work at their convenience or discretion, but are not obliged to do so, if the vehicle was not purchased from them.

All Erwin Hymer Group UK products are classed as portable and therefore all work under warranty requires the caravan to be delivered and collected from the approved chosen Erwin Hymer Group UK agent.

The cost of transporting the caravan by any means to and from the place of repair is the responsibility of the owner.

In order to comply with the terms of the above cover the following conditions must be met.

Conditions attached to the warranty cover

- You must retain the original sale invoice for the caravan.
- All new caravans must be registered with Erwin Hymer Group UK within 6 weeks of purchase. Your retailer can forward this information to us. Please keep us informed of any name or address changes by using the Notification of Change to Name and Address form.
- The caravan must have an annual service and damp check carried out by an Erwin Hymer Group UK approved Retailer / Service Centre or NCC Approved workshop or NCC equivalent standard as set out in this handbook. Original invoices, service checklists and damp reports must be retained as proof that the annual services have been carried out in accordance with our warranty terms.
- Service intervals:
 - a) In years 1, 2, and 4 through to 9 the

service must be completed no more than 60 days either side of the anniversary of the date of purchase.

- b) In Years 3 and 10 the service must be completed no more than 60 days on or before the anniversary of the date of purchase and must not exceed this date.
- c) For second owners the service in years 3 and 6 must be completed on or up to 60 days before the anniversary of the first owners date of purchase and must not exceed this date.
- d) No service interval should exceed 14 months.
- e) **Failure to service the vehicle within the specified time limits will invalidate your warranty.**

We would recommend that you have your service carried out by an Erwin Hymer Group UK Approved Retailer/Service Centre, who are able to assist you should warranty work be required. Should you choose to have your service carried out by a non Erwin Hymer Group UK Approved agent, an additional charge may be payable by the customer to cover the second inspection.

- The caravan must be made available for repair within 6 weeks of the date of inspection for the purpose of carrying out the repair work.

Erwin Hymer Group UK reserves the right to inspect the vehicle before work commences. Failure to do this may invalidate your claim.

- All defects must be assessed by an Erwin Hymer Group UK Approved Service Centre to determine the root cause of the issue. They must submit a warranty claim for our consideration, to determine if the defect is covered by the manufacturer's warranty agreement. The repair method will be agreed and any rework will be carried out at no charge to the customer.

We will not be responsible for cost incurred without prior approval via the warranty authorisation process.

Warranty work may only be undertaken by an Erwin Hymer Group UK Approved Retailer/Service Centre.

- Erwin Hymer Group UK will pay the costs of remedial work to the repairer, only after approved work has been carried out. The cost of transporting, towing or moving the caravan by any means to or from the place of repair is the responsibility of the owner.
- The Policy is not retrospective.
- No liability will be accepted for any consequential loss, damage, costs, expenses or other claims for compensation arising which were not reasonably foreseeable by both parties when the caravan was originally purchased.
- No alteration may be made to the original construction.

Erwin Hymer Group UK reserve the right to inspect the caravan at any time.

Mains electrics

It is recommended that you have your mains electrics system inspected by a NICEIC approved contractor every 3 years.

Transfer of ownership

If you purchase this vehicle as a used vehicle it may be possible to transfer the unexpired term of the warranty cover (up to a maximum of six years commencing at the original date of purchase from new). The warranty cover for a used vehicle commences from the original date of purchase from new and is as follows:

- Three Year Manufacturer's Warranty
- A maximum of Six Years' Water Ingress and Body Integrity Warranty

The warranty is subject to the usual terms and conditions' set out in the handbook and is only transferable on payment of an administration fee. Full documentary evidence that the caravan has been serviced annually should be provided at the time of transfer, in accordance with the terms and conditions of the warranty stated in the handbook. Transfer of ownership must be completed within three months of change of legal ownership. Please complete the Notification of Change of Ownership form in your handbook. Failure to do this will negate the remaining warranty.

This warranty does not affect the purchaser's statutory rights. The warranty shall be governed and construed in accordance with the laws of England and the parties irrevocably submit to the exclusive jurisdiction of the courts of England.

For second owners the service in years 3 and 6 must be completed on or up to 60 days before the anniversary of the first owners date of purchase and must not exceed this date.

NON WARRANTY REPAIRS

Should you require any replacement parts for your caravan it is necessary that you contact the Retailer from whom you purchased the caravan or any Erwin Hymer Group UK approved Service Centre and give the following information, which will help in identifying the required component:

- (i) Model and make of caravan
- (ii) VIN number
- (iii) Description of required part
- (iv) Photograph, size or diagram of required part

Please note: All parts must be ordered and supplied through an approved Retailer/Service Centre.

REMEDIAL WORK

Erwin Hymer Group UK, together with its suppliers is continually undertaking extensive research into testing, remedial work procedures and materials such as structural bonding adhesives, gaskets and tapes. Therefore, if for any reason your new caravan is damaged or requires remedial work then we would recommend an approved Erwin Hymer Group UK Retailer or Service Centre should undertake such work.

All such work must be undertaken using only approved Erwin Hymer Group UK genuine parts, recommended structural bonding adhesive and following Erwin Hymer Group UK procedures. Erwin Hymer Group UK will also undertake to supply certain specialist repairers with the necessary spare parts. In this case, your selected repairer must contact the PARTS DEPARTMENT with all enquiries.

CARAVAN CONSTRUCTION - MAIN COMPONENTS

The following is a brief description of the main components used in your caravan. More comprehensive descriptions can be found in the equipment manufacturers literature held in the Owner's Information Pack.

ALKO CHASSIS

Manufactured from high quality steel, the chassis has extra deep sections to provide strength at points of maximum stress. Large elongated holes are punched in the longitudinal and towbar, ('A' frame) members, to reduce weight to a minimum. Each hole incorporates a return flange to maintain the required strength and provide rigidity in the extra deep sections.

The chassis frame is of a bolted construction which, should the need arise, allows replacement of individual parts.

BRAKING SYSTEM

The Braking System comprises a rod operated overrunning device with expander mechanism and adjuster box. An automatic reversing system with a spring loaded reverse lever is attached to the adjuster box. The system also incorporates a link device, which gives added safety to the handbrake operation when parking on a reverse slope or steep hill. Brake adjustment instructions are given in the maintenance section of this guide.

SOLID CONSTRUCTION BODY SHELL

Erwin Hymer Group UK Caravan Bodies are constructed from the highest quality materials. The fully insulated floor is a constructed timber frame with plywood internal floor and a GRP underskin for added water resistance and insulation laminated together for strength. The walls & roof comprise an insulated foam sandwich having pre-coated aluminium exterior surfaces or GRP and vinyl coated internal finish. Wooded framing is positioned within the sandwich to add strength. The latest technology is used to produce the extremely well insulated and robust, yet lightweight sections.

WINDOWS

Windows are all of a double glazed acrylic construction and the door frame is extruded aluminium.

INSULATION

Erwin Hymer Group UK caravans are built to comply with grade 3 thermal insulation in accordance with the European Standard BSEN 1645 part 1. This states that an average temperature difference of at least 35°C between the inside and outside temperatures should be achieved when the outside temperature is -15°C and an internal temperature of 20°C.

FRONT PANEL AND GAS BOTTLE LOCKER DOOR

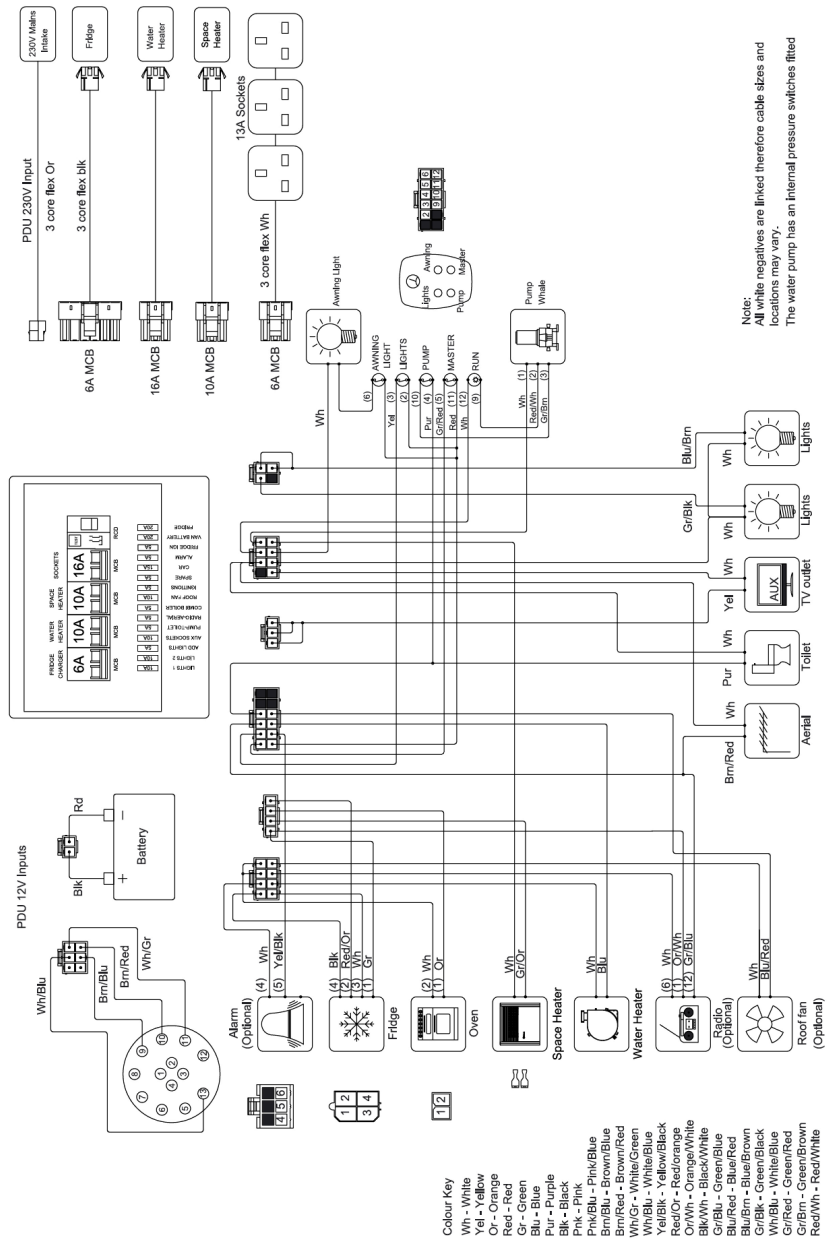
The front panel and gas locker door are constructed from ABS plastic for strength and lightness.

The gas bottle compartment is primarily used for the storage of the gas bottle and is not intended to be sealed water tight to the exterior of the vehicle.

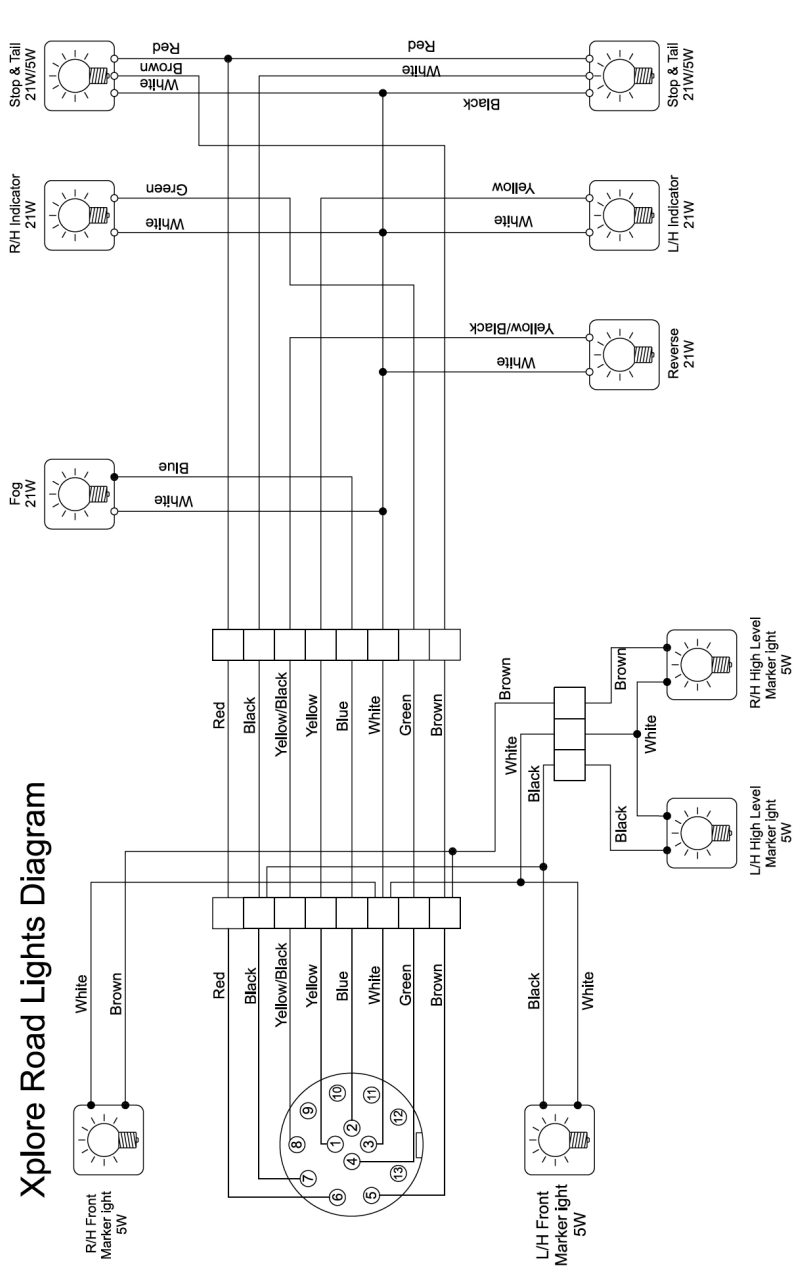
AWNING CHANNEL

Each caravan is fitted, as standard, with an awning channel as an integral part of the near- and off-side aluminium roof and body side moulding. We only recommend awning skirts with suction cup fasteners.

WIRING DIAGRAM - XPLORE

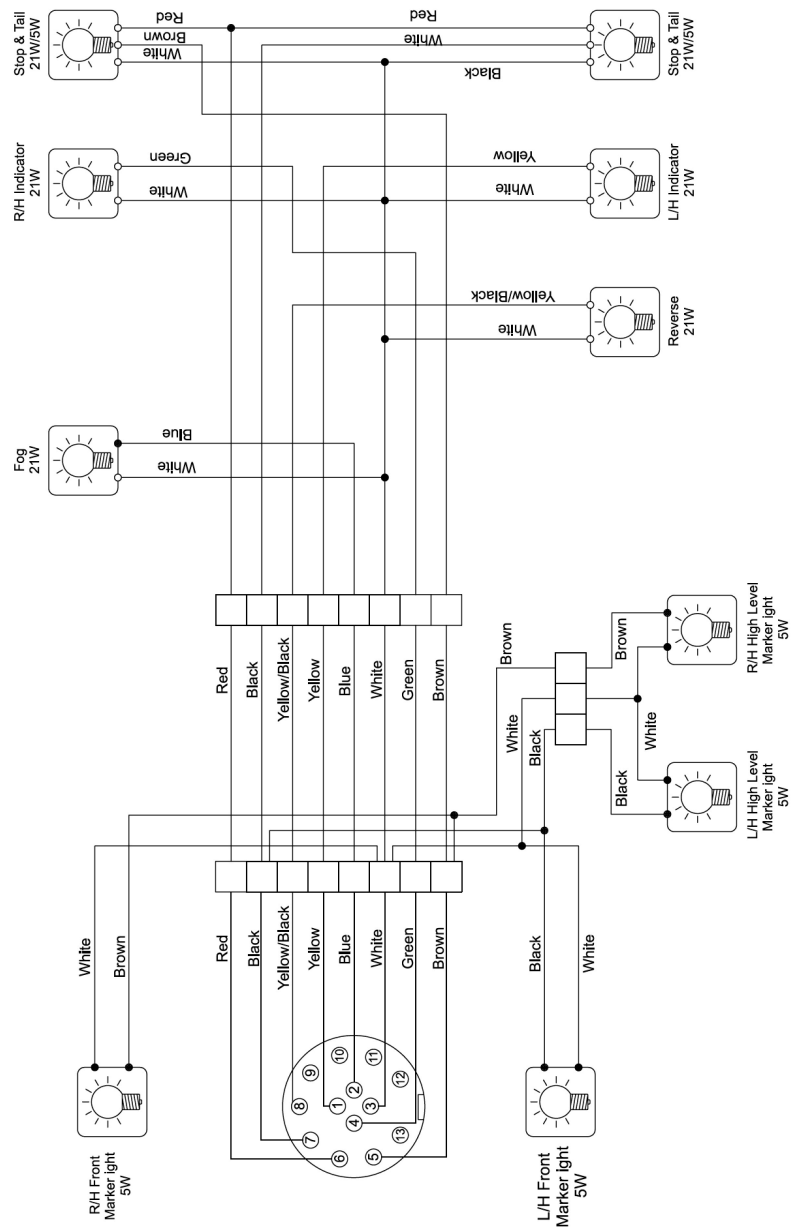


ROAD LIGHTS - XPLORE

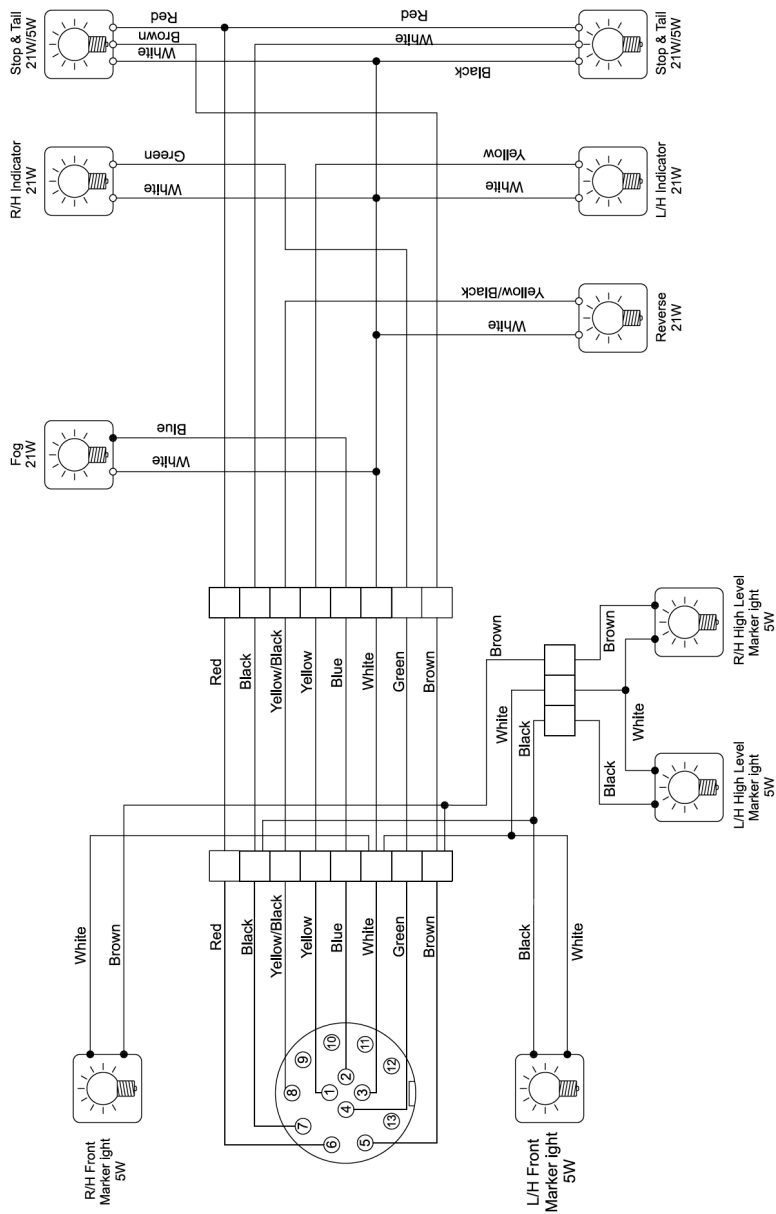




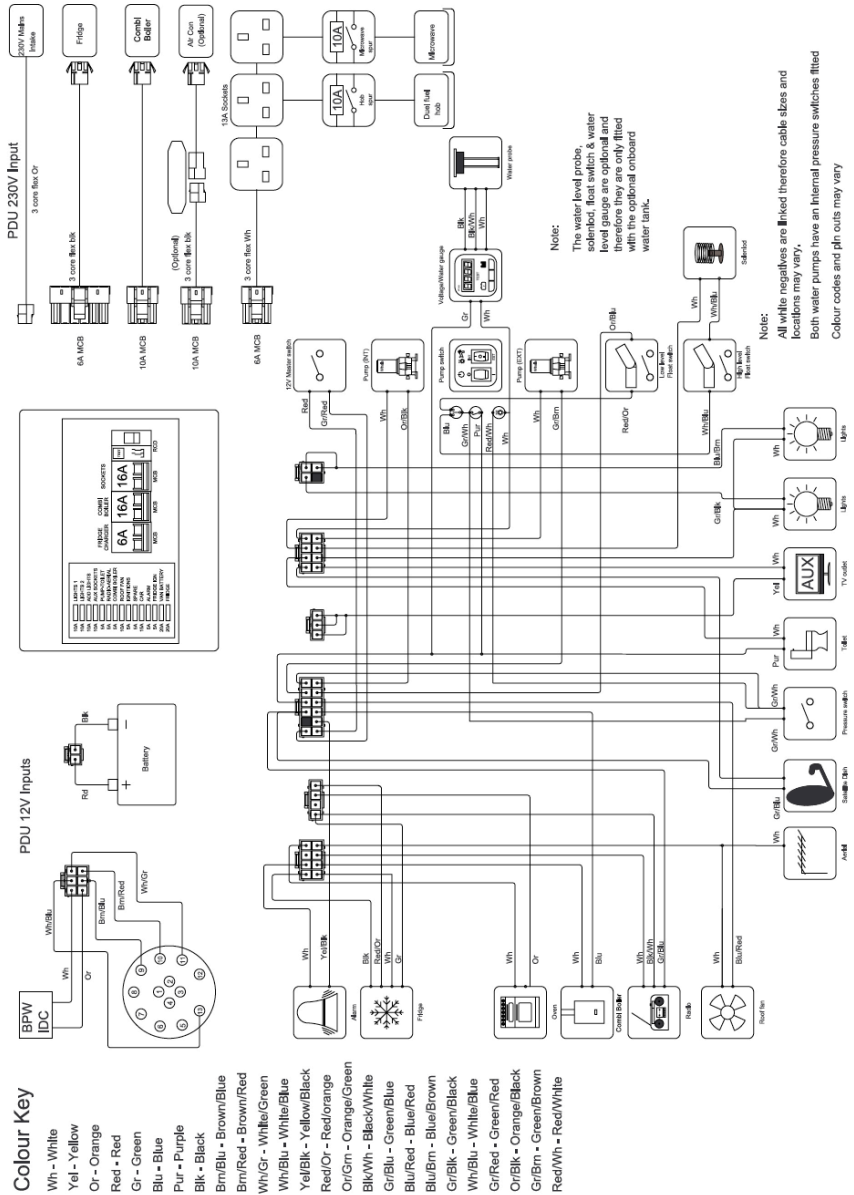
ROAD LIGHTS (WHIRLWIND, AVANTE APEX)



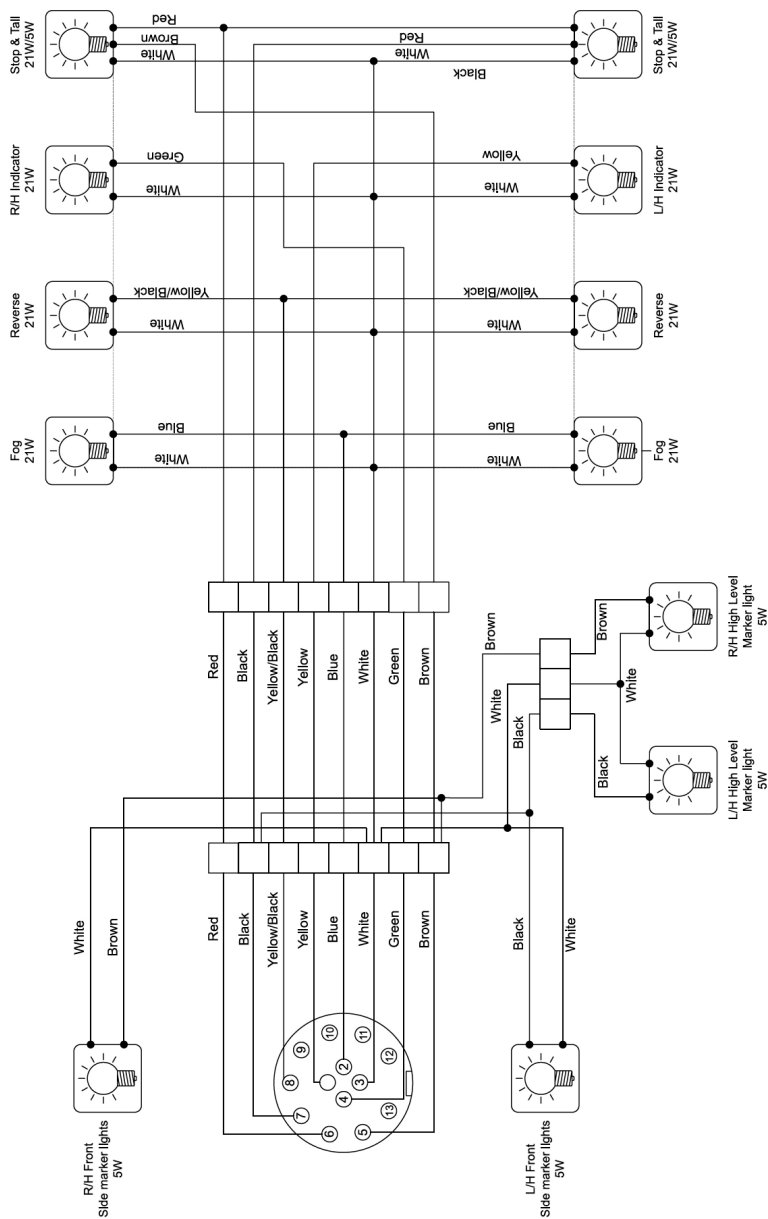
ROAD LIGHTS – CRUSADER – HURRICANE, SOLANO & SHAMAL



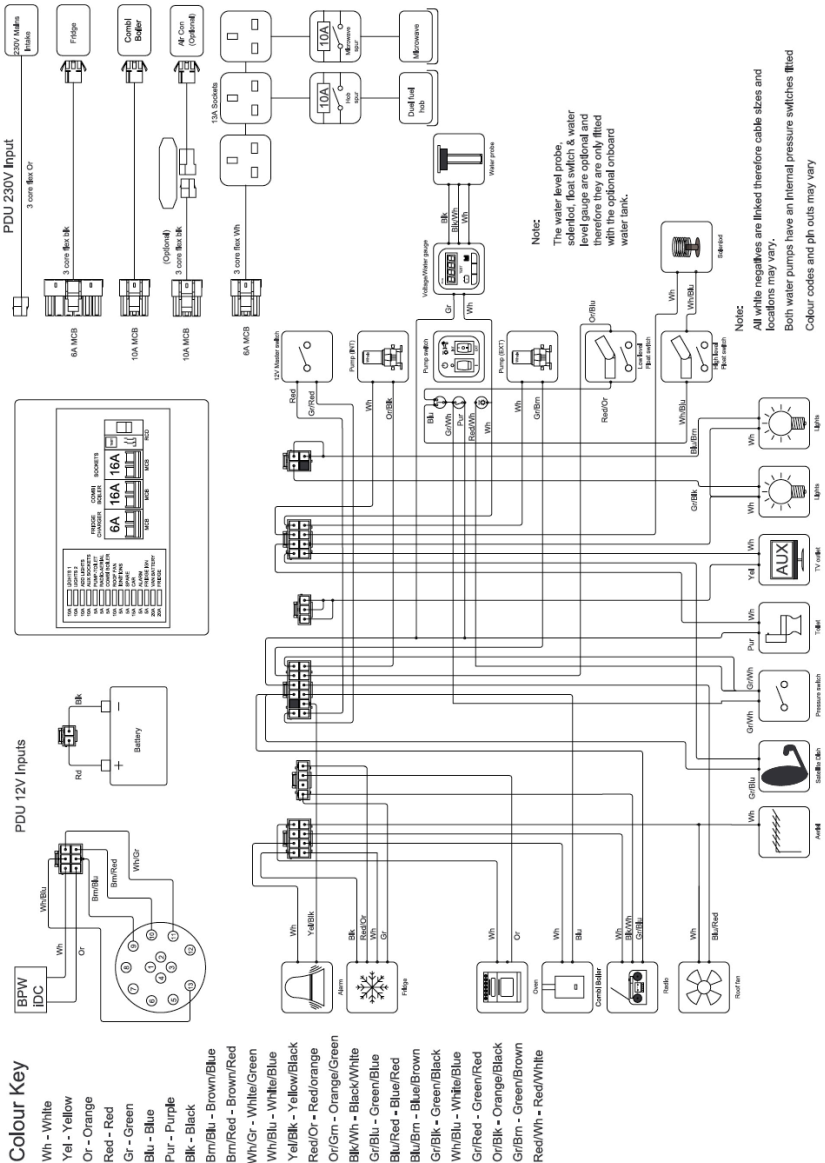
WIRING DIAGRAM – CRUSADER AND ALL OTHER MODELS



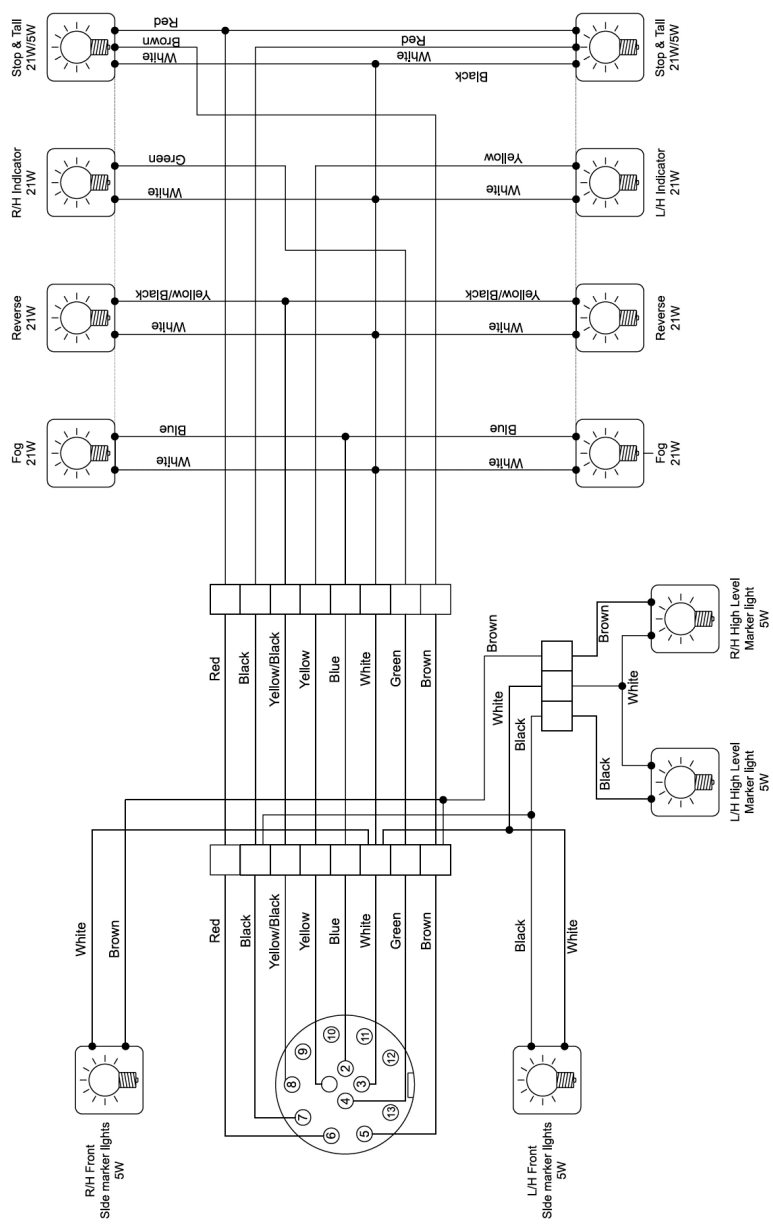
ROAD LIGHTS – CRUSADER AND ALL OTHER MODELS



WIRING DIAGRAM - BUCCANEER



ROAD LIGHTS - BUCCANEER



GENERAL QUESTIONS

Q: What is SoLiD construction?

A: SoLiD construction is unique and our jointing system, coupled with Henkel's tried and tested structural bonding adhesives, spreads the stresses and strains evenly across all joints and creates an impervious barrier to water ingress.

Q: Where Can I Obtain Your Latest Brochure?

A: Our latest brochures are available from Approved Retailers or can be viewed and printed from our website www.elddis.co.uk, www.buccaneer-rv.co.uk, www.xplore-rv.co.uk.

Q: Why Is the Handbook Not Specific To My Model?

A: Many of the components used in the manufacture of our caravans are identical throughout our model ranges, so we produce a generic handbook, which covers all models manufactured within a range for that season. If the literature supplied with your caravan does not answer your question then please contact your Retailer for further assistance.

Q. I Require Technical Or Other Information, Who Can Help Me?

A. The majority of information you require is available through your Erwin Hymer Group UK Retailer or Service Centre.

Q - Can You Tell Me The Second Hand Price Of My Caravan?

A - As a manufacturer we are not involved in the second hand market. You should contact a Retailer, The Camping and Caravanning Club and/or The Caravan Club. They should be able to give some indication of market value.

Q: How Can I Avoid Excessive Caravan Snaking When I Tow And What Should I Do If It Starts?

A: Erwin Hymer Group UK has extensively tested our caravans and we are confident of their stability. However, many other factors can influence your towing unit. When loading your caravan put heavy items low down and mainly over the axle(s). You should not stow tins, bottles or heavy items in overhead lockers, during towing. Everything else should be distributed evenly around your caravan, front and back, and each side of the centre line. Should snaking start, if at all possible don't brake and don't compensate by steering into the swings. Just ease up on the accelerator and allow your speed to gradually decrease until the snaking subsides.

Q: What Is The Correct Awning Size For My Caravan?

A: Ground to ground awning measurements for Erwin Hymer Group UK caravans can be found by looking in the latest model section, the Price List Archive section on our website, or by referring to the relevant Technical Data Sheet. However, we advise you verify this information by threading a piece of string through the awning channel from ground to ground, and then by measuring the string. Your awning manufacturer will then advise on the nearest size of awning appropriate for your measurement.

Q: Can I Fit A Bicycle Rack?

A: Yes contact your Erwin Hymer Group UK Retailer for details of our recommended bike rack.

Q: Can I Fit A Top-Box?

A: No.

Q: Can I Fit An Air Con?

A: Please refer to website.

Q: My Interior Lights Are Not Working, What Do I Do?

A: It is possible that all of the 12V mains electrical equipment may not be operated simultaneously. Check fuses, battery connections and power supply (master light switch). Refer to your Retailer or Service Centre for further assistance.

Please Note: The internal lights in your caravan will not operate whilst the caravan's electrical hitch cables are connected to a towing vehicle with the engine running.

Q: Where Can I Get Spare Parts For My Caravan?

A: We do not supply parts direct, we have an extensive network of Retailers/Service Centres which will be able to source most parts you require. For details of your nearest Erwin Hymer Group UK Retailer please refer to "Find A Retailer" section on our website.

Note: If your vehicle is 8 years or older please refer to the Help and Support/FAQ's/Parts section of our website: <https://elddis.co.uk/help-and-support/faqs> for a list of surplus stockists and breakers.

Q. How Many Years Will Spare Parts Be Available For My Caravan?

A. Erwin Hymer Group UK will endeavour to supply spare parts for a caravan, for up to 8 years from date of manufacture.

Q. What If The Parts Are No Longer Available?

A. Where an original part is no longer available, whenever possible we will suggest a suitable alternative if it is available.

Q. Who Can Carry Out Warranty Work On My Caravan?

A: Your supplying Retailer is obliged to undertake your warranty work. However, any Approved Erwin Hymer Group UK Retailer or Service Centre can undertake the work, but this is at their discretion. We will also accept services completed by a NCC approved service centre or NCC equivalent standard as set out in this handbook, but they will not be able to undertake warranty work if they are not approved by Erwin Hymer Group UK.

Q. Why Don't You Stock Parts At The Erwin Hymer Group UK Factory?

A. Due to the volume of models we produce it is not possible for us to maintain stock levels of every individual component used in our manufacturing process. We do stock commonly requested items, but some items must be made to order.

Q. I Am Having Trouble Booking My Caravan For Its Service, In Line With The Requirements. What Timescale Is Acceptable?

A: Please refer to the Q: Who can service my Caravan.

Q. I Have A Problem With My Caravan, Who Can Help Me?

A. We would always recommend that you contact your supplying Retailer. Your local Erwin Hymer Group UK Retailer or Erwin Hymer Group UK Approved Service Centre may be able to assist. An inspection can then take place and the necessary course of action agreed.

Q. I Am Unhappy With The Service I Have Received From My Retailer/Service Centre, Where Do I Go From Here?

A. We would recommend that you write to your Retailer/Service Centre, detailing your problems and requirements, requesting a response explaining how they will resolve your complaint. A copy of your letter can also be forwarded to The Erwin Hymer Group UK Customer Care Department, quoting the serial number of your caravan and the name of the Retailer/Service Centre. Please be assured that we will assist your Retailer/Service Centre in resolving any problems.

Q. Where can I obtain a Certificate of Conformity for my product?

A. Original certificates of conformity are supplied with the product, duplicates are chargeable and can be requested from our customer care team. We endeavour to provide a duplicate certificate of conformity for any product manufactured from the year 2000 onwards.

If you have a product manufactured prior to the year 2000, we are no longer able to supply a

duplicate certificate of conformity. Additionally, due to the age of your vehicle we are unable to account for any modifications made following the initial purchase. If you are looking to export the vehicle, we recommend the vehicle is taken for an Individual Vehicle Approval (IVA) or similar in the country of intended registration. Please contact the relevant countries registration authority for further information.

Q: Who can service my Caravan?

A: Any EHG UK Ltd Approved / Service Centre can undertake the service work, but this is at their discretion. We will also accept services completed by a NCC approved company, but they will NOT be able to undertake any warranty work if they are not an EHG UK Ltd Approved / Service Centre.

You may choose to have your annual service performed by an unauthorized repairer / service Centre and if you do it will be your responsibility to ensure that the service meets our requirements.

GLOSSARY

13 pin plug

The plug used to connect the caravans electrical system to your towing vehicle to enable the road lights, refrigerator and battery charger to operate towing.

A Frame

This is the triangular part at the front of the caravans chassis which is between the main body and the hitch, it is also called the drawbar.

ABS Plastic

Acrylonitrile Butadiene Styrene Plastic the material used for most of the large plastic components within your vehicle.

Actual Laden Weight

This is the total weight of the vehicle when ready for use by the end user.

Awning

This is a tent-like structure of fabric over a supporting framework, which can be attached to the side of vehicle.

Battery Charger

This is required to keep a leisure battery charged. All vehicles include a charging facility which operates via the mains hook-up, and also has the ability to recharge through the base vehicle chassis or tow car's alternator.

Berth(s)

Sleeping place - Refers to the number of people a vehicle can accommodate for sleeping.

Blown Air Heating

A method of heating the living quarters of a vehicle by use of a fan pushing air out through a number of outlets.

Breakaway Cable

A thin steel cable linking the caravan handbrake to the vehicles tow bar - In the event of the caravan becoming detached from the car, the cable will pull the caravan handbrake on before snapping.

Bunk Bed

This is a sleeping place, usually higher up than a conventional bed. Often (but not always) this can be folded or removed to provide additional living space.

Butane

Is a form of Liquefied Petroleum Gas (LPG) which normally comes in blue cylinders. This type of gas is most commonly used in the UK, although a switch to propane is advised in severely cold weather conditions.

Calor

This is the main supplier of propane (red) gas cylinders and significant seller of butane (blue) gas.

Cassette Blind

This is a roller blind which is fitted as part of the window assembly, often along with a flyscreen, thus giving a neat installation.

Cassette Toilet

A form of chemical toilet found in modern vehicles, where the waste holding tank can be accessed and emptied from outside.

Chemical Toilet

A toilet that has a compartment in which waste is treated with chemicals.

Control Panel

Used as the description for the panel of electrical switches and gauges governing 12V and mains electricity systems.

Corner Steadies

The winding device built into each corner of a caravan chassis that is used to stabilise the body once set up on a pitch.

Coupling Head - See hitch.

CRiS

This is the Central Registration and Identification Scheme. It is a voluntary scheme which registers a vehicle. Allows you to check the legitimate right to ownership of the seller of a second-hand vehicle, and helps in the recovery of stolen vehicles.

Dinette

This is a popular style of seating arrangement where two seats or settees face each other across a table.

Earth Leakage Circuit Breaker

ELCB Earth leakage circuit breaker - see residual current device (RCD).

Essential Habitation Equipment

Those items and fluids required for the safe and proper functioning of the equipment for habitation as defined by the manufacturer of the vehicle. This includes items such as the leisure battery and gas cylinders, plus water contained in the water heater etc.

Flyscreens

Mesh fittings for windows doors and roof vents, to keep out insects etc.

Free-Standing Table

This is a table which, because of its leg design, can be used inside or outside.

Full Service Pitch

This is a pitch which has individual provision for fresh water supply and waste water disposal, in addition to mains electricity and in some cases TV aerial connection.

Gas Cylinder

This is a portable, pressurised container for the storage of LPG.

Gas Locker

Is the compartment on the caravan for the storage of gas cylinders.

Gas Drop out Holes

These are not part of the ventilation. LPG is heavier than air, so holes through the floor below gas-powered appliances allow any leakage of gas to exit the habitation area.

Gas Regulator

Safety device fitted between the gas cylinder and the gas system of a vehicle, which controls the pressure of gas being released from the cylinder.

Grey Water

This is the waste water from sink/shower.

Gross Train Weight

This is also known as Combined Weight. The maximum permitted weight of an outfit as specified by the tow vehicle manufacturer.

Gross Vehicle Weight (GVW)

This is the weight of the vehicle laden to its maximum, as defined by the manufacturer. See also MTPLM.

GRP

Is Glass-reinforced plastic, but more commonly known as glass fibre (not fibre glass, which is a trade name).

Handbook

This is a generic owners manual, a guide to the workings of your vehicle.

Hardstanding

This is a pitch which has a hard surface made of gravel, asphalt, concrete etc, instead of grass.

Hitch

This is the mechanism which allows a caravan to be attached to a tow ball.

Hitch Lock

A security device that prevents the caravan hitch being used.

Hook-Up

This is a facility on a pitch for connection to mains electricity.

Ingress

The entry of water into the vehicle structure.

Jack

This is a device for raising the vehicle so that a wheel can be changed, for instance.

Note for caravans only - Not to be confused with corner steadies which although they are sometimes referred to as 'corner jacks' are steadying, not lifting devices.

Jockey Wheel

The small front wheel attached to the caravan A-frame used to support the forward end of the caravan, when detached from the towing vehicle.

Kerb Weight

This is the empty weight of a motor vehicle as defined by the manufacturer.

Layout

This is the interior design and details where furniture units are placed in relation to each other.

Leisure Battery

This supplies the power for the vehicle 12V systems and is sometimes called an auxiliary battery.

Levelling

The process of ensuring that a vehicle is level when sited on a pitch. It is important for comfort and also to ensure the correct functioning of the fridge and water systems.

LPG

Liquid Petroleum Gas, i.e. butane or propane.

L-Shaped

This is a term where the seating area of a vehicle is indeed L-shaped.

Mains Hook-Up

This is a campsite facility where you can plug into a mains electricity supply.

Maximum Hitch Height

The maximum height at which the hitch should be connected to a towing vehicle.

Maximum Permissible Towing

This is the maximum weight that the towing vehicle is allowed to tow.

Maximum User Payload

This is the maximum payload available for the user.

MIRO - Mass In Running Order

Weight of the vehicle equipped to the manufacturer's standard specification including essential habitation equipment.

MTPLM - Maximum Technically Permissible Laden Mass

The technical maximum permissible laden weight of the vehicle, this must not be exceeded.

NCC - National Caravan Council

The only trade association representing manufacturers, retailers and suppliers within the vehicle industry.

Nose weight

The weight exerted on the tow bar. Special scales are available from accessory shops for measuring this weight.

Number Plate

Caravans must display a legal number plate showing the same registration mark as their towing vehicle.

Optional Equipment Payload

A mass specified by the vehicle manufacturer for factory or pre-registration fitted options only.

Outfit

The caravan and its towing vehicle considered as a unit.

Owners' Club

This is a group of people who usually own the same brand of vehicle and enjoy meeting up for rallies.

Payload

The amount you can put into a vehicle. Specifically the difference between the Maximum Technical Permissible Laden Mass (MTPLM) and the Mass In Running Order (MIRO).

PDI

This is an inspection undertaken by the Retailer prior to handover to the customer.

Pitch

A designated area of a vehicle site allocated for the use of one outfit. Most sites will be arranged with defined pitches.

Propane

Gas used in colder conditions and is usually supplied in red cylinders.

RCD

This is a residual current device and is part of the electrical system which will 'trip' if there is an electrical fault.

Road Lights

The external lights used while the vehicle is travelling.

Roof Lights - See Roof Vent.**Roof Vent**

Is an opening unit in the ceiling which lets in ventilation and light, these vary in size, but the best ones will have integral blinds and flyscreens and are also called rooflights.

Semi-Rigid Pipe work

Is water pipes made of a semi rigid plastic and are preferable to cheaper convoluted piping which can act as a trap for germs and smells.

Serial number

This is a unique serial identification number for a vehicle.

Single Axle

This is a caravan with a single pair of wheels on one axle. See also twin axle.

Slats

Sometimes used for beds and can improve ventilation to mattress cushions.

Space Heater

This is a type of heating equipment for the living quarters. Modern units fitted offer gas and mains-operation.

Speed Rating

This is the maximum speed at which a tyre may be used, as marked on its sidewall.

Stabiliser

A safety device which helps to prevent instability, this is done by increasing the friction between the caravan hitch and the tow ball.

Steady Winder

A handle for operating the corner steadies.

Torque Wrench

A form of spanner used to set nuts and bolts to a specified degree of tightness. It is recommended for adjustment of wheel fixings on vehicle.

Towing Limit

See manufacturer's braked towing limit and manufacturer's unbraked towing limit.

Towing Mirrors

Additional rear vision mirrors added to a towing vehicle to provide a greater width of view to see past a caravan.

Twin Axle

Is a caravan with two pairs of wheels, on two axles which are located close together. These are usually the larger, heavier caravans, where the second axle helps carry the greater weight more easily, and also makes a longer caravan more stable to tow. See also single axle.

User Payload

The weight of all items carried in the vehicle.

U-Shaped Settee

Usually a reference to seating that literally is 'U' shaped.

Vehicle Kerb weight

The weight of the tow car often indicated in the manufacturers specifications..

VIN - Vehicle Identification Number

This is a unique vehicle identification number. All Cars and motorhomes should carry a VIN. Caravans are not obliged to, but the serial number is used as part of the CRiS voluntary registration scheme.

Warranty

Are the terms and conditions that spell out your rights with regards to servicing, repair or replacement of parts as provided by the manufacturer.

Wild Camping

Term used for staying overnight away from a campsite. Illegal in many countries, but permission may be granted by individual landowners.

SERVICE DOCUMENTS

TOURING CARAVANS - ANNUAL SERVICE RECORD

In order to ensure your warranty remains valid an annual service must be carried out in accordance with the requirements of this handbook. You are responsible for any charges incurred for the service of your vehicle. If the annual service is performed by an authorised Erwin Hymer Group UK Approved Retailer / Service Centre or NCC Approved Workshop then Erwin Hymer Group UK Limited deems that the service has been performed correctly.

You may choose to have your annual service performed by an unauthorised repairer / service centre and if you do it will be your responsibility to ensure that the service meets our requirements.

We will ask you to provide a copy of the following documentation:

- Damp report
- Annual Habitation Service check list (to the minimum standard set out in this handbook)
- Invoice / dated service stamp
- Gas and Electrical certificates for the vehicle

If the Annual Service has not been performed in accordance with the requirements in this handbook your warranty will be invalidated, however this will not affect your legal or statutory rights as a customer.

Erwin Hymer Group UK will not pay any unapproved Service Centre for the undertaking of any warranty work.

Minimum service requirements

The service must be undertaken by suitably qualified personnel.

A full damp test check should be undertaken and damp readings recorded.

A service check must be performed to the minimum standards set out below.

Annual Habitation Service check list

UNDERBODY

Item	Condition
Corner steadies, folding step and spare wheel carrier where applicable - check operation and lubricate	
Under slung tanks and pipes - check condition and security	
Body Attachment - check security of body to the chassis	

UNDERBODY (Caravans Only)

Item	Condition
Coupling head / Ball acting stabiliser - check wear or damage & lubricate	
Nose weight - check & report (best practice)	
Coupling head gaiter - check for splits	
Breakaway cable & clip - check condition, routing & integrity	
Drawbar - check	
Jockey wheel - check condition and lubricate	
Check chassis condition	
Wheels and tyres - check for damage, wear, depths and pressures (incl. spare)	

UNDERBODY (Caravans Only) (continued)

Item	Condition
Remove brake drums - clean & check hub bearings & seals	
Clean brake shoes & check condition (incl. springs and expanders)	
Brake rods, cables & supports-check operation, lubricate and adjust	
Refit brake drums – fit new hub nuts and torque to manufacturers settings, adjust brakes & check operation	
Replace road wheels & torque to manufacturers settings	
Handbrake mechanism - check operation, adjust & lubricate	
Check self-levelling to manufacturers requirements (where applicable)	

ELECTRICAL SYSTEMS

Item	Condition
Check the leisure battery is being charged from both the engine when running, or with a multi-tester (caravans) and the mains charger	
Leisure Battery (if fitted) - check condition of the battery & its compartment	
Leisure Battery (if fitted) - check condition, top up fluid if required and check the charge condition	
Interior lighting & equipment - check operation and fuse rating	
Awning light - check operation	
Wiring earths - check for defects on all ELV circuits (Visual)	
LV inlet plug & extension lead – check condition & resistance across pins	
Earth Bonding - visual inspection	
RCD unit - check operation of RCD test button and operations of MCBs	
230V appliances - check operation	
Air conditioning (if fitted) - check operation	
13 pin plug - check condition	
230V sockets - check for correct polarity	

GAS SYSTEMS

Item	Condition
Regulator and gas hose - check age performance and security	
Perform a gas pressure check	
LPG Tank (if fitted) - check security	
Flame failure devices - check operation	
Gas cylinder - check security	
Gas dispersal holes - check they are clear from obstructions.	

APPLIANCES (check gas and electric operation)

Item	Condition
Fridge - check operation from 12V, 230V & gas	
Hob - check operation	
Oven - check operation	
Grill and fan - check operation	
Water boiler – Check operation	
Heater - check operation and top up header tank with anti-freeze (where applicable), bleed as necessary	
Any additional permanently fitted appliances	

WATER SYSTEM

Item	Condition
Water pump & pressure switch - check operation	
Taps, pipes and micro switches - check operation	
Water filter housing & inline filter - check for leaks & replace filter where necessary	
Water system - check for leaks	
Water Tanks (if fitted) - check security of all water tanks including underslung tanks.	
Toilet - check security, operation of flush pump and free from obstructions.	
Drain down the system when checks are complete.	

VENTILATION

Item	Condition
Rooflights - check all are free from obstructions, cracks and have a free air flow	
Floor vents - remove protective cover and check they are clear from obstruction then refit covers	

FIRE & SAFETY

Item	Condition
Smoke and carbon dioxide detectors - check for operation via the test buttons fitted, check battery condition.	
Fire Extinguisher (if fitted) - check it is still within date	
Fire Blanket (if fitted) - check it is still within date	
Habitation door operation	
Motormover - check 12v cables are sealed at entry to battery box (where fitted)	

BODYWORK

Item	Condition
Doors and windows - check all catches are present and operating correctly.	
Blinds and flyscreens - check condition and operation	
Roof - check condition of roof.	
Cab seats - check condition of the seats and seats belts	
Floor - check condition of floor	
Furniture - check condition of the furniture	
Damp Test - undertake a damp test and record all readings taken.	
Lubricate all locks	

CARE WARRANTY

It is a condition of this warranty that a service and safety check is carried out by your caravan retailer at least once a year (12 months from the date of purchase) in accordance with the NCC recommendations.

ANNUAL SERVICE RECORD

MODEL

VEHICLE IDENTIFICATION NUMBER YEAR

1st SERVICE

DATE:

RETAILERS STAMP:

I/We certify that an annual service has been carried out in accordance with the manufacturers' and NCC recommendations.

2nd SERVICE

DATE:

RETAILERS STAMP:

I/We certify that an annual service has been carried out in accordance with the manufacturers' and NCC recommendations.

3rd SERVICE

DATE:

RETAILERS STAMP:

I/We certify that an annual service has been carried out in accordance with the manufacturers' and NCC recommendations.

4th SERVICE

DATE:

RETAILERS STAMP:

I/We certify that an annual service has been carried out in accordance with the manufacturers' and NCC recommendations.

5th SERVICE

DATE:

RETAILERS STAMP:

I/We certify that an annual service has been carried out in accordance with the manufacturers' and NCC recommendations.

6th SERVICE

DATE:

RETAILERS STAMP:

I/We certify that an annual service has been carried out in accordance with the manufacturers' and NCC recommendations.

7th SERVICE

DATE:

RETAILERS STAMP:

I/We certify that an annual service has been carried out in accordance with the manufacturers' and NCC recommendations.

8th SERVICE

DATE:

RETAILERS STAMP:

I/We certify that an annual service has been carried out in accordance with the manufacturers' and NCC recommendations.

9th SERVICE

DATE:

RETAILERS STAMP:

I/We certify that an annual service has been carried out in accordance with the manufacturers' and NCC recommendations.

10th SERVICE

DATE:

RETAILERS STAMP:

I/We certify that an annual service has been carried out in accordance with the manufacturers' and NCC recommendations.

11th SERVICE

DATE:

RETAILERS STAMP:

I/We certify that an annual service has been carried out in accordance with the manufacturers' and NCC recommendations.

12th SERVICE

DATE:

RETAILERS STAMP:

I/We certify that an annual service has been carried out in accordance with the manufacturers' and NCC recommendations.

NOTIFICATION OF CHANGE OF OWNERSHIP

If you purchase this vehicle as a used vehicle it may be possible to transfer the unexpired term of the warranty cover (up to a maximum of six years commencing at the original date of purchase from new). Please refer to the warranty section of the handbook for terms and conditions.

Please complete the attached form and post it to us along with the following information:

- A copy of the new CRIS registration form
- A copy of the service handbook displaying complete and up to date service history including service checklist and damp report.
- Please contact the customer care team to arrange payment.

Transfer of ownership must be made within the first three months of any change of legal ownership in order for the warranty cover to remain valid.

Erwin Hymer Group UK Limited Customer Care

Delves lane

Consett

County Durham

DH8 7PE

www.elddis.co.uk

Email documents to customer.care@erwinhymergroup.co.uk payment can then be taken over the phone.

NOTIFICATION OF CHANGE OF OWNERSHIP

Previous owner details (if known):

Name:

Address:

.....

..... Post code:

Email:

New owner details:

Name:

Address:

.....

..... Post code:

Daytime telephone number: Date of purchase:

Email:

Details of Caravan:

Range: Model:

Vehicle identification number (17 digits):

* In order for you warranty to remain valid, your caravan must have been serviced annually by an Approved Retailer / Service Centre, NCC Approved Workshop or NCC equivalent standard as set out in this handbook.

If you do not want to receive information about products and services from Erwin Hymer Group UK, please tick. ☐

NOTIFICATION OF CHANGE TO NAME AND ADDRESS

In order that we can provide you with the very best level of service we ask that you keep us informed of any changes to your contact details.

Should your details change please complete the attached form and post to us:

Erwin Hymer Group UK Limited Customer Care

Delves Lane

Consett

County Durham

DH8 7PE

www.elddis.co.uk

Email documents to customer.care@erwinhymergroup.co.uk

NOTIFICATION OF CHANGE TO NAME AND ADDRESS

Previous details:

Name:

Address:

..... Post code:

Email:

New details:

Name:

Address:

..... Post code:

Daytime telephone number: Date of purchase:

Email:

Details of your Caravan:

Range: Model:

Vehicle identification number (17 digits):

If you do not want to receive information about products and services from Erwin Hymer Group UK, please tick. ☐

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