

Dear owner

Thank you for deciding to buy one of our new motorhomes. We are sure you will enjoy many happy hours in it and we hope the information and hints in this handbook will heighten your enjoyment.

The handbook has been designed to give you a general guide to the care, use and maintenance of your motorhome.

Whether you are a new or an experienced motorhome user the hints will help to protect your investment.

The information contained will answer most of your queries, but if there are any aspects which are not covered please consult your appointed dealer.

Important - please quote the base VIN (vehicle identification number) in all correspondence with your dealer or Swift Group Limited (Swift), this can be found on the lower corner of the front windscreen or on the Fiat plate positioned on the front cross member within the engine compartment.

All the illustrations and descriptive matter in this handbook are intended to give a general idea of the motorhome. Changing market and supply situations may prevent us from maintaining the exact specification details in this handbook. We therefore reserve the right to alter specifications as materials and conditions demand.

Dealers are not agents of Swift Group Limited and have absolutely no authority to bind Swift Group Limited by any express or implied undertaking or representation.

On-Line Handbooks

Throughout the season, specifications and equipment details contained within this handbook may change. Please refer to our online handbooks (www.swiftgroup.co.uk) for the most up-to-date version of your handbook.

Handbook Definitions

Customers should note that Motorhomes are supplied with two handbooks, the User Handbook which contains general information for the use and care of your product and the Technical Handbook, which contains technical information, weights and dimensions of your product.

Happy touring!

Dealer Name:

.....

Telephone Number:

.....

E-mail:

.....

VIN:

.....

Sales Tel:

.....

Service Centre Tel:

.....

Parts Tel:

.....

First Service Due:

.....

Swift Talk

Swift Talk is the central forum for the Swift community online. A place for all those united in their love of caravanning, motorhomes, holiday homes and touring in general, to share their experiences, meet new friends and find out a world of information on how to enjoy their touring lifestyle.

The site is packed full of features that actively encourage members, not only to liaise with the Swift Group via the forums, but also interact with each other through publishing their own content, uploading and sharing photos and video, and even posting their own blogs for the community to follow.

Swift Talk is the first place to learn about new product launches, events and Swift Group news, it's also the first place customers can go to as a quick reference to frequently asked questions or to actively take part in the forums; providing valuable feedback on Swift Group products and customer service.

The online community can even be used to create your own groups, perfect for Owners' Clubs, dealers and exhibitors to attract new members, publicise and build awareness for upcoming events, rallies and shows.

Anyone who owns, uses, or is thinking of buying a Swift Group caravan, motorhome or holiday home, or would just like to be part of the growing Swift community is actively encouraged to sign up, create their own content, and start talking!

Just visit www.swift-talk.co.uk and become part of a unique online experience.



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Panel Van Conversion Motorhome Warranty

All the illustrations and descriptive matter in this handbook are intended to give a general idea of the motorhome. Changing market and supply situations and our policy of continuous product development may prevent us from maintaining the exact specifications detailed in this handbook. We therefore reserve the right to alter specifications as materials and conditions demand.

Dealers are not agents of Swift Group Limited ("Swift") and have absolutely no authority to bind the manufacturer by any express or implied undertaking or representation.

Your panel van conversion motorhome has three warranties:

Base Vehicle Warranty – provided by Fiat

Your vehicle is a panel van conversion motorhome which utilises a Fiat base vehicle. For a panel van conversion motorhome, Swift takes a panel van as supplied by Fiat and fits out the interior of the van for habitation. Fiat provide a manufacturer's warranty for the base vehicle as supplied to Swift by them. For any issues with the base vehicle warranty please contact your local commercial Fiat dealer.

This Motorhome Warranty does not cover any parts of your motorhome that are covered by the Fiat manufacturer's warranty. Your base vehicle warranty is subject to the terms and conditions contained in the Fiat handbook supplied with the base vehicle and the vehicle must be serviced in accordance with Fiat requirements.

SuperSure Warranty – provided by Swift

For all parts or fittings of your panel van conversion motorhome other than the Fiat base vehicle, Swift will repair (or at it's option, replace) any defective parts or fittings for 3 years from the date of purchase (or hire purchase) subject to conditions, terms and exclusions below.

Panel Van Conversion Body Shell Warranty ("Body Shell Warranty") – provided by Swift

Swift will repair (or at its option, replace) any defects with the panel van conversion to the body shell for 3 years from the date of purchase (or hire purchase), subject to the conditions, terms and exclusions below. This Motorhome Warranty does not cover any parts of your motorhome that are covered by the Fiat manufacturer's warranty.

Conditions for the SuperSure and Body Shell Warranties

1. You must ensure that the habitation part of your motorhome has an Annual Service (see clause 2 below) within 90 days before or 60 days after each anniversary of the original date of purchase. In order to preserve your SuperSure and Body Shell Warranties the third Annual Service must, however, be carried out before the expiry of the 36 month period from the original date of purchase. If you have not performed an Annual Service then Swift will not be obliged to perform any work under the applicable warranty. Original VAT invoices must be retained as proof that Annual Service have been carried out.
2. The Annual Service on the body shell and habitation area must be carried out in accordance with the requirements in this handbook. You will be responsible for any charges made for an Annual Service. If the Annual Service is performed by an authorised Swift Group Service Centre then Swift warrants that the Annual Service has been performed correctly. If the Annual Service is performed by an unauthorised repairer or service centre then the Annual Service has not been performed in accordance with the requirements in this handbook and/or work has been performed on your motorhome that is defective or faulty, then Swift will not be obliged to perform any work under this Warranty (insofar as it relates to defective or faulty work or defective Annual Service).

3. All new motorhomes must be registered with Swift within 6 weeks of purchase as new.
 4. The benefit of the SuperSure and Body Shell Warranties may be transferred to a new owner if the motorhome is re-sold, provided that the motorhome has been serviced in accordance with the requirements of this handbook, and details of the change of ownership have been supplied to Swift using the change of ownership form set out in this handbook as soon as reasonably practicable after the change.
 5. If any repairs are identified as being necessary to the body shell or habitation areas during an Annual Service or otherwise, Swift will only pay for Warranty work performed by an authorised Swift Group Service Centre. The motorhome must be made available to an authorised Swift Group Service Centre within 6 weeks of the date the repair need was identified for the work to be carried out. The cost of transporting, towing or moving the motorhome by any means to or from the place of repair is the responsibility of the owner.
 6. The SuperSure and Body Shell Warranties only apply to motorhomes purchased and used primarily within the UK. Please refer to this Fiat handbook for use of the base vehicle outside the UK.
9. In the years 2 and 3 the SuperSure Warranty will only cover any defect with the following components:
 - Water system; heater, fresh water tank, water pump, water gauges, taps and shower heads;
 - Heating system and components;
 - Main proprietary items (for example fridge, toilet, cooker);
 - Auxiliary electrics; and/or
 - Windows (excluding window furniture and blinds).
- In years 2 and 3, any defect specified in the Exclusions will not be covered.

Exclusions

10. Swift shall not be liable under the SuperSure and Body Shell Warranties for any defect related to or arising from the following:
 - The failure of a component for reasons of fair wear and tear;
 - Damage resulting from freezing, fire, over-heating or accidents (whether caused by the user or a third party);
 - Misuse of any component;
 - Normal deterioration, corrosion, intrusion of foreign or harmful bodies, lack of servicing or negligence of any person other than Swift which causes stoppage of or impairment to the function of any component of the motorhome;
 - Replacement of parts which have reached the end of their effective working life because of age and/or usage;
 - Cleaning or adjustment of any assemblies;
 - Cosmetic finishes to kitchen sinks, cooker tops, vanity units, shower trays;
 - Damaged caused by any abrasive cleaners;
 - Issues related to condensation in normal use.

Terms

7. The Body Shell Warranty covers any defect with the joints and seals of the panel van conversion. This includes body leaks, delamination of floors, and water ingress through any permanently sealed seam joints which relate to the conversion of the panel van. This Motorhome Warranty does not cover any parts of your motorhome that are covered by the Fiat manufacturer's warranty.
8. In the first 12 months the SuperSure Warranty will cover any defect other than those specified in the Exclusions below.

ASSISTANCE

- Routine maintenance items which are part of the annual service including lubricants, rubber gas hose, the cleaning of the heater and fridge flues, the replacement of gas jets, the resealing and/or replacement of shower room sealant, and the adjustment and lubrication of locks.
11. In addition to the exclusions above, in years 2 and 3 of the SuperSure Warranty Period, Swift Group Limited shall not be liable under this Warranty for any defects related to:
- Side window blinds (after 18 months from date of purchase)
 - Cab window blinds (after 10 months from date of purchase)
 - Pullout awnings (after 24 months from date of purchase)
 - External Omni-Step (after 24 months from date of purchase)
 - Television or audio equipment
12. Swift shall also not be liable under the SuperSure, and Body Shell Warranties if the motorhome has been neglected, misused, modified or used for hire or reward or if the identification marks (chassis/VIN numbers) have been removed or defaced. The motorhome will be deemed to have been neglected if it has not been serviced and maintained as stated in this handbook or any repairs being identified as necessary at an Annual Service or by a Swift Group Service Centre have not been carried out in a reasonable time.

You have legal rights under UK law governing the sale of consumer goods. This Warranty does not affect your legal rights.

The name and address of the Warranty provider is:

Swift Group Limited, Dunswell Road, Cottingham, East Yorkshire, HU16 4JX

To make a claim under this Warranty, contact the Swift Group Service Centre which supplied your motorhome. Alternatively,

details of your nearest authorised Swift Group Service Centre can be obtained by contacting the Swift Group Customer Service Department on 01482 875740, or enquiring on the website www.swiftgroup.co.uk

Change of Ownership

You can transfer the remainder of any three year 'Supersure warranty' and the three year 'Body shell' warranty, details of how to do this can be found at the rear of this handbook.

Assistance

What to do if you Require Assistance

Congratulations on purchasing a Swift Group product. We are confident that you will enjoy many happy holidays. However, should you have an enquiry or require assistance with a problem, we hope that this guide will be of assistance to you.

If you have a problem, or enquiry with regards to your new motorhome, please follow these steps:

1. Check the Owners Handbook, paying particular attention to the fault finding advice at the back of the book.
2. Contact your supplying dealer for assistance.

If you need to contact Swift Group Limited, please be aware of the following:

1. When contacting Swift Group, please quote your name, postcode and build number of your motorhome.
2. In most instances, the Customer Service Team will involve your dealer in resolving the issue you are experiencing.
3. Check our website www.swiftgroup.co.uk and enter the help and advice section which provides answers to frequently asked questions and how to contact us.
4. If you are contacting the company by email, letter or fax, the Customer Service Team will respond to you within five working days from the date of receiving the correspondence.

5. If you are calling the Customer Service Team, please avoid where possible, Mondays and lunch times.
6. Please be aware that Swift Group Limited cannot send parts direct from the factory. In all cases, without exception, your dealer must place the order for you.

Supplier contacts

A number of Swift Group suppliers manage their own Technical and Warranty related queries. Where a customer has a question relating to a product manufactured by a company listed below, we would advise that the first contact should be directly with them

SARGENT

Sargent Electrical Services

Unit 39, Tokenspire Business Park, Beverley, East Yorkshire, HU17 0TB

Phone: 01482 678981

Fax: 01482 678987

E-mail: support@sargenttd.co.uk

truma

Truma UK Ltd.

Park lane, Dove Valley Park, South Derbyshire, DE65 5BG

Phone: 01283 586020

Fax: 01283 586029

Email: technical@trumauk.com

THETFORD Corporation

Thetford Ltd.

Unit 6, Brookfields Way, Manvers, Dearne Valley, Rotherham, South Yorkshire, S63 5DL

Phone - 0844 997 1960

Fax - 0844 997 1961

Email - info@thetford.eu

Dometic

Dometic (UK) Ltd

Dometic House, The Brewery, Blandford St Mary, Dorset, DT11 9LS

Phone: 0844 626 0133

Email: technical@dometic.co.uk

Annual service / inspection record

In order to comply with the warranty, you must have your motorhome inspected and serviced in accordance with the warranty.

We highly recommend that you have your Motorhome serviced by a Swift Group Approved Service Centre who have direct access to our online Customer Service system, Connect. This system provides them with the ability to order approved parts and ensure that any product upgrades which may be available for your Motorhome can be offered to you and carried out as part of the service. In the unfortunate event that an issue requires attention under warranty then a Swift Group Approved Service Centre are able to submit a warranty claim to the Swift Group for processing, and deal with the issue for you from start to finish. All of our Swift Group Approved Service Centres are provided with up to date technical information and have access to current repair methods giving you peace of mind that any defect has been repaired effectively.

It is important that the owner's handbook is stamped on the appropriate page by the authorised Swift Group Service Centre.

Failure to do this will invalidate the warranty and the transfer of the warranty on the change of ownership.

The inspection should take approximately two hours and will cover the areas dealt with in the annual service check list. Any areas requiring service and/or maintenance will be highlighted by your dealer and we recommend that you authorise any necessary work to be carried out.

Just as the engine/gearbox/roadwheels need regular servicing by your chassis dealer, so there are components in your conversion that need regular maintenance by your motorhome dealer.

These include the gas and electrical systems and the seals in the bodywork. Your dealer will complete the record in this handbook to show that the work has been carried out.

1. Damp and lamination test.
2. Chassis and chassis to body security.
3. Motorhome step.
4. Road lights, wiring and reflectors.
5. Internal lights and 12V DC system.
6. Water heater - gas and 230V AC.
7. Hob, grill and oven.
8. Refrigerator 230V AC, 12V DC and gas.
9. Gas system.
10. Water pump, taps and water system.
11. Mains 230V AC system.
12. Windows and fittings.
13. Roof lights.
14. Furniture hinges/stays etc.
15. Exterior locks and hinges.
16. All internal vents.
17. Seals.
18. Blinds and fly screens.
19. Blown air heating systems.
20. Smoke alarm and battery
21. Carbon monoxide detector and battery

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CODE OF CONDUCT

Camp sites**Arrivals**

Report to reception immediately on arrival.

Vehicle Movement

Keep to roadways unless otherwise directed.

Adhere to speed limits. Note that these are generally 10 mph (remember that the stopping distance on grass is considerably greater than on tarmac). Only a person in possession of a current driving licence may drive on the site.

Park correctly as advised on your pitch. Where possible leave 20 feet of free space around your vehicle.

Use of Site Appliances

Use the electrical mains hook-up in the correct manner and with caution.

Ensure that all fresh water taps/connections are turned off after use. Have care and consideration when using all facilities (toilets and showers etc) and leave clean and tidy. Young children should be supervised.

Waste Disposal

If the vehicle is not fitted with a waste water tank, a suitable receptacle should be placed below all waste water outlet pipes. Do not let these containers overflow.

Dispose of all waste water where instructed. Empty effluent from chemical toilets where instructed. To avoid possible damage to sewage purification works, only approved chemical fluids must be used. Under no circumstances should coal tar, phenol or caustic-based fluids be used.

Disposable nappies and similar bulky items must not be put into chemical closet emptying points but should be wrapped in a polythene bag and placed in the container provided.

Place all litter in containers marked for the purpose.

Noise

Do not make excessive noise. Children should be restrained from making excessive noise.

Flying kites and model aircraft and the use of items like catapults or air-guns, as well as ball

games, should not be permitted among, or close to other vehicles.

Musical instruments, record players, radios and televisions should not be used to the inconvenience of other people on the site.

Open and close doors quietly. Power generators must be adequately silenced and used with consideration.

Dogs and other Pets

All dogs and other pets should be kept under control. Unless permission has been granted, no animal should be allowed loose on the site and leads must not exceed 10ft.

No animals should be allowed in the shower/toilet blocks. Do not let dogs foul the site.

Fire Precautions

Adhere to and take note of fire precautions noting the whereabouts of the fire points.

⚠ WARNING: Provide one dry powder fire extinguisher of an approved type or complying with EN3-7, of at least 1kg capacity, by the main exterior door and a fire blanket next to the cooker. Familiarise yourself with the operating instructions on your fire extinguisher and the local fire precaution arrangements.

When using a dry powder extinguisher it is suggested that the motorhome be evacuated until the powder has settled, to avoid inhalation.

Unless permission has been granted, barbecues should not be used.

If permission is given, consideration should be given to the annoyance that can be caused to other users of the site.

Open fires are not allowed.

Awnings and Tents

Awnings and tents should only be used when permission has been obtained.

When on grass and staying for more than a few days, the ground sheet and/or side flaps of awnings should be periodically raised in order to avoid damage to the ground.

Departure

Leave the pitch clean and tidy.

On leaving, check out with reception paying the required fees.

Wild Camping

Camping away from licensed sites, without the permission from the land owner or his agents, is not allowed in the United Kingdom.

When permission has been granted, all aspects of this Code should be adhered to.

On no account should:

- a. Litter be disposed of other than in the receptacles provided.
- b. Water be allowed to escape from the vehicle.
- c. Chemical toilets be emptied except into the disposal places agreed with the land owner.
- d. Washing or similar be hung outside the vehicle.

Parking

Motorhomes should only be parked in approved places.

When using the facilities of a motorhome, care and consideration should be given to those around them.

Driving

Before moving off, elevated rooflights and aerials should be lowered and correctly secured, and top hinged windows closed. Likewise all doors and access lockers for gas containers and chemical toilets must be properly secured.

Exterior steps should be properly retracted and secured. When the vehicle is in motion it is compulsory for all front seat passengers and rear seat passengers to wear seat belts, where fitted. When using a motorhome on either the public highway or private roads the Highway Code should be complied with and full consideration given to other road users.

In the event of a motorhome travelling slowly the driver of the motorhome should, where possible, pull over in order to let other traffic pass.

⚠ WARNING: When travelling, refuelling or on a ferry ensure the gas system is fully isolated at source.

Handbooks (Chassis & Converter)

Before using a motorhome all aspects of the handbooks, produced by the chassis manufacturer and the converter, must be read and adhered to.

The separate chassis manufacturer handbook refers to your motorhome chassis and base vehicle including care and maintenance.

Environment

Care and consideration should be taken to protect the environment.

Observe the Country and Coastal Codes shown overleaf.

The country code

Enjoy the countryside but respect its life and work. More people than ever before are exploring the countryside, interested in farming, plant life, bird watching or just observing the general wildlife. Whatever your interest, there is a lot to learn, but please observe the following code:

1. Guard against all risk of fires. Hay and heathland catch alight easily and once ablaze are very difficult to put out.
2. Fasten all gates.
3. Keep your dog under proper control.
4. Keep to the paths across farm land.
5. Avoid damaging fences, hedges and walls.
6. Leave no litter.
7. Safeguard water supplies.
8. Protect wildlife, wild plants and trees.
9. Go carefully on country roads.
10. Respect the life of the countryside.

Remember: fire spreads quickly.

The coastal code

As our coastlines are increasingly used for recreation and education, the following suggestions are made to enable us to enjoy our inheritance and preserve it for posterity.

DO NOT trample about, or move rocks unnecessarily.

DO NOT frighten seals or seabirds.

DO NOT spill detergents, solvents or fuel from boats as these can kill marine life.

Live molluscs and crustaceans need not be collected as souvenirs - dead shells can usually be found.

Shellfish can take years to grow and fines can be imposed for not observing national regulations.

DO NOT pull up seaweeds unnecessarily.

Make your visit instructive - not destructive.

Look at material - don't remove it. Take notes and photographs, not specimens.

Observe by-laws and be considerate to others.

National Trust property and Country Parks have regulations to protect the wildlife. Follow these and the Country and Coastal Codes.

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BEFORE MOVING OFF & MOTORHOME TERMS

Before moving off check:

- Gas cylinders are correctly positioned, secured and turned off unless using en-route heating.
- All gas operated appliances have been isolated except en route heating where fitted and in use.
- Loose articles including luton ladder are stowed securely. Do not stow tins, bottles or heavy items in overhead lockers.
- All lockers and cupboard doors are closed and secured.
- Tables are stored or locked in their transit position.
- Fridge is on 12V operation and door lock is set.
- 230V mains input socket flap is securely closed.
- All drain taps are closed.
- Tyre pressures
- Exterior roof rack ladder is raised and secured.
- All windows/doors/rooflights are closed and secured.
- Exterior step (where fitted) is retracted / folded in.

Special attention must be taken to ensure all top hinged windows as well as rooflights are closed when in transit. All units should be fully closed and latched to prevent damage. The motorhome rear and side sliding door should also be locked.

⚠ WARNING: Large and/or voluminous items should be stored securely before travelling.

Motorhome terms

Mass in running order

This is the mass of the motorhome as stated by the manufacturer, i.e. ex works weight including the driver, 90% fuel capacity, LPG at 100% capacity and standard fixtures and fittings, in compliance with European Regulation No.1230/2012 (Masses and Dimensions).

The mass in running order contains provisions for the masses of liquids and gas (see technical book for details).

Note: If you travel with water in the fresh water tank or waste tank, the payload will be reduced accordingly.

Note: Quoted MRO is subject to tolerance, due to weight variation of materials used in Motorhome construction.

Maximum User Payload:

The maximum allowable weight to be put into the motorhome whilst it is being driven. This is made up of 4 sections: Personal effects, conventional load, optional equipment and essential habitation equipment.

The Maximum User Payload is the difference between the Maximum Technically Permissible Laden Mass and the Mass in Running Order.

Personal Effects:

Those items which a user can choose to carry in a motorhome and which are not included as Essential Habitation Equipment or Optional equipment.

Conventional Load:

A mass allowance for each designated passenger seat.

Optional Equipment:

Items made available by the manufacturer over and above the standard specification of the motorhome.

Essential Habitation:

A mass allowance for liquids in systems not accounted for within the MRO.

Maximum Technically Permissible Laden Mass:

The maximum weight for which the motorhome is designed for normal use when being driven on a road, laden. This mass takes into account specific operating conditions including factors such as the strength of materials, loading capacity of tyres etc.

⚠ WARNING: Under no circumstances should the Maximum Technically Permissible Laden Mass of this motorhome be exceeded.

Nose weight on towed trailers:

The static mass of the trailer towing device on the rear of the towing vehicle.

When measuring the noseweight it is important that the trailer is loaded.

The trailer is intended to be towed slightly nose heavy. The nose weight can be adjusted by distribution of the load. The nose weight should be approximately 7% of the actual laden weight (but not greater than the hitch capacity) and at the same time suit the motorhome requirements. See 'Advice on Towing' page 22.

Loading of vehicle

⚠ WARNING: Loads must not be exceeded. The driver is responsible for arranging the loads so that they comply with the technical weight limits of the specific motorhome model. See specification handbook.

Correct weight distribution is an important factor in ensuring your vehicle is well balanced and easy to drive. It is therefore necessary to load your motorhome carefully making sure all heavy articles are evenly distributed and are preferably placed in the lower lockers or bed boxes.

⚠ WARNING: Do not travel with televisions or microwaves in overhead lockers unless the appliance was supplied fitted to your motorhome by the manufacturer.

Although it is essential to ensure that the total weight of your motorhome does not exceed the stipulated Maximum Technically Permissible Laden Mass, (MTPML), it is important to remember that the front and rear axles also have individual maximum weights which must not be exceeded.

To ensure adequate road holding the load on the front axle, under all conditions, must not be less than 40% or more than 70% of the total weight.

Ensure you distribute the payload equally on each side of the vehicle to avoid an imbalance.

TYRES & PASSENGER SEATING

These weights, together with the MTPLM, can be found on the statutory plate affixed to the forward edge side sliding door.

⚠ WARNING: Turn off all gas appliances while the vehicle is in motion. If a heating system is fitted isolate all appliances except the heater.

⚠ WARNING: Please take care to ensure you have allowed for the masses of all the items you intend to carry in your motorhome e.g. passengers, optional equipment, essential habitational equipment and personal effects such as clothing, food, pets, bicycles, sailboards and sports equipment etc.

Large storage areas

The large storage areas provided in some motorhome layouts are designed solely for the purpose of carrying personal possessions, these areas must not be used:

- As a habitation area (eg living, sleeping or cooking).
- To carry passengers, animals or livestock.
- For the installation (or use) of any LPG gas operated appliances (unless supplied fitted by the manufacturer).
- For carrying LPG gas cylinders.
- To carry any flammable liquids, unless properly stored, sealed and secured.
- For the operation of an electrical generator.
- In such a way that the load exceeds the MTPLM, and/or minimum and maximum axle loads.

Care must be taken to ensure that exterior doors are closed, locked and that all possessions are properly stored and secured before setting off on any journey.

⚠ WARNING: Motorhomes over 3m have a maximum vehicle height label affixed to the driver's side blind. When planning your route take the vehicle height into consideration.

Tyres

If a wheel or tyre is changed any replacement must be of the same type of construction and size.

The law requires that the tyres and pressures must be suitable for the use to which they are being put. The minimum tread depth must be 1.6mm throughout a continuous band comprising the centre three-quarters of the breadth of the tread and around the circumference of the tyre.

Please refer to base vehicle manufacturer's handbook for tyre pressure information. This may also be displayed in the driver's or passenger's door aperture.

The motorhome tyre pressure noted in the Technical book are the pressures stated by Fiat for your vehicle calculated in a fully laden condition. If you are not running fully laden, reduced pressures could be used but please seek clarification from the tyre manufacturer.

Dedicated travelling passenger seating

Seat belts are fitted to all travelling seats.

Travelling seats are designated by the manufacturer and vary according to the layout you have purchased. Each seat is homologated i.e. tested to all relevant safety requirements. NEVER

travel in or attempt to install a seatbelt to a non-designated seat.



Fig. 1

⚠ WARNING: Side facing seats are designed for habitational use only, not for when the vehicle is in motion.

Seat belts and legislation

Designated driver and passenger seats are fitted with seat belts and **MUST** be worn.

Children, aged up to 3 years of age, must wear an appropriate child restraint suitable for their age and weight.

Children from 3 years of age and up to 135cm (4'5") in height, or 12 years of age, whichever is reached first must use a restraint suitable for their age.

Children over 135cm (4'5") in height or aged 12 or 13 years must wear a seat belt.

Note: It is the legal responsibility of the driver To ensure children aged up to 14 years old are suitably restrained.

For passengers aged 14 and over, it is their responsibility (not the driver) that a seat belt is worn.

Designated passenger seats within the habitational compartment of your motorhome are identified (fig. 1).

Seat belts are fitted for your safety and must be worn unless a 'Certificate of Exemption from Compulsory Seat Belt Wearing' is held. This Certificate must be produced if asked for by the Police – seat belt offences can result in a fine.

Child seats

Choosing/Buying

Go to a reputable retailer such as Halford's, Mothercare, Toys 'R' Us, John Lewis etc. Most reputable retailers will have trained child seat advisers on site and will offer a fitting service. Ask the advisor to fit various seats to the vehicle. Once a correctly fitted seat has been installed, satisfy yourself on it's suitability for your child and the vehicle before buying as it is important to use a correctly fitting seat in your motorhome.

⚠ WARNING: The child seat you use in your car may not be suitable for mounting on a motorhome seat.

Choose the right seat for your child's height and weight.

Ensure it has an official approval mark (usually the United Nations 'E' mark). The current UN standards is Regulation 44.04

Never fit or use a second hand car seat. It could have fit been damaged and may not meet modern standards. The fitting instructions may also be missing.

Positioning/Fitting

Dependant upon the child seat type, the most suitable position for the child seat to be fitted may be the front passenger seat of the cab (NOTE airbag advice below) or the window seat of the forward facing rear seat, the isle seat in the rear is not a recommended position, advice should always be taken from the retailer on the suitability and security of the seat in the motorhome. Read and follow the child seat manufacturer's instructions for fitting the seat.

All Swift motorhomes are fitted with inertia reel seat belts, however, the child seat must be tight in the adult seat. Push all your weight into the child seat as you tighten the belt.

Keep a copy of the child seat fitting instruction in the motorhome for easy reference.

Any doubts, ask an advisor to show you how to correctly install the seat.

Airbag

Never fit a rear facing child restraint in a seat with an active airbag in front of it.

Forward-facing child restraints should be positioned as far back from the airbag as possible. Check the base vehicle handbook.

THREE POINT SEAT BELTS

Three point seat belts

This section refers to the seat belts located in the habitation area of your motorhome.

Fastening the seat belt:

Insert tongue into buckle; a positive 'click' indicates correct assembly.

Releasing the seat belt:

Press the red release button, the tongue will be ejected from the buckle.

- The belt is designed for use by one person and must not be put around a child seated on a person's lap.
- The belt is suitable for restraining most child seats and boosters.
- The belt should at all times be adjusted and used in accordance with the instructions. No excessive slackness should be present.
- Once installed the diagonal should pass across the centre of the shoulder and the buckle should lie just on or below the hip.
- Avoid twisting the webbing during use. Webbing must not be allowed to chafe against sharp edges.
- Do not make alterations or additions to the belt.
- Belts that have been cut, frayed, damaged or stressed through impact should be replaced. After impact the motorhome anchorage points should also be checked.
- To clean use warm soapy water only.
- Periodic inspection of the installation will ensure reliability of the seat belt.

Driving licence

Licences issued to drivers who passed their car driving test before 1st January 1997 include categories B+E and C1+E which gives them entitlement to drive motor vehicles up to 7500kg MTPLM.

Drivers who passed their test on or after this date have category B entitlement only, which restricts the entitlement to motor vehicles with up to 8 passenger seats and an MTPLM of up to 3500kg with trailers up to 750kg MTPLM (4250kg combined) or larger trailers

providing the combination of the trailer and towing vehicle does not exceed 3500kg and the MTPLM of the trailer does not exceed the unladen weight of the towing vehicle.

Drivers who passed their test on or after the 1st January 1997 will need to take an additional test(s) to gain the B+E and C1+E entitlement.

Vehicle classifications

Motorhomes up to 3500kg MTPLM are P/LGV (Private Light Goods Vehicles), motorhomes with an MTPLM over 3500kg and up to 7500kg are P/HGV (Private Heavy Goods Vehicles). These are used for vehicle excise duty (road tax) classifications.

Advice on Towing

The towing capability of each motorhome differs depending on the specific chassis and engine types, (see 'Towing Capabilities Table' in your specification handbook).

This table takes account of the maximum front and rear axle loadings as well as the minimum front axle loading in two conditions, MRO and MTPLM condition.

Towing in these, and any other condition requires sensible loading and distribution of payloads to ensure the requirements of the towing capability table are met.

When towing, the demands on both the vehicle and driver increase. A trailer reduces manoeuvrability, the ability to climb hills, acceleration and braking capacity and makes the vehicle handle and corner differently. It will also increase the fuel consumption of the vehicle.

Always brake in good time. Special care must be taken when descending gradients. Change down before going down a steep hill so the engine can act as a brake. Ensure that the towing vehicle tyre pressures are correct and adjusted for full load conditions and that the trailer tyre pressures are as recommended by the trailer manufacturer. Regularly check the operation of trailer brakes and lights.

For maximum stability, when loading the trailer ensure that the loads are properly secured during transit. Position loads so that most of the weight is placed close to the floor and,

where possible, immediately above or close to the axle(s). Where the load can be divided between trailer and tow vehicle, loading more weight into the vehicle will generally improve the stability of the combination. After loading the trailer, check that the nose weight and axle loads are in accordance with the manufacturer's recommendations, also check the rear and front axle loads on the motorhome. When calculating the laden weight of the trailer, remember to include the weight of the trailer PLUS THE LOAD.

Note: Towing regulations vary from country to country. It is very important to ensure that national regulations governing towing weights and speed limits are observed (refer to the relevant national motoring organisation for information). The stated maximum permissible towing weights refer to the vehicle's design limitations and NOT to any specific territorial restrictions.

Notes:

1. Do not exceed the motorhome gross vehicle train weight.
2. Do not exceed the maximum front & rear axle loads on the motorhome.
3. Ensure the motorhome front axle load is never less than 40% or more than 70% of the total weight.
4. Motorhomes with an MTPLM up to 3500kg which have European Type approval can only be fitted with a type approved towbar complying to 94/20/EC.
5. The limit for towing an un-braked trailer is 750kg (based on VIN plate not actual weight), this applies to a towed car.

6. A car dolly with a car with a GVW over 750kg in place is considered as two trailers, these are legal for use for recovery but under the Road Traffic Regulations Act 1984 the combination is limited to 40 mph on motorways and dual carriageways and 20 mph elsewhere. A car dolly is not legal for transportation (there is a very specific difference between recovery and transportation. Recovery is defined as the removal of a broken down vehicle to a place of safety).

7. The maximum permitted vehicle combination length is 18.75m, however any combination must ensure compliance with the turning circle requirements of Construction and Use regulations 1986 & 97/27/EC.

Note: Not all motorhomes are suitable for towing and may not have sufficient payload to permit towing. If in doubt, consult your dealer.

European Touring

Please note there are a number of requirements placed on a driver when driving on European roads. Carrying a warning triangle, high visibility jacket, first aid kit and spare bulb is now compulsory in many EU states but some EU countries are now introducing further regulations such as carrying a breathalyser kit and not being able to use satellite navigation systems with speed camera warnings.

We would advise customers to check on the many web-sites available to ensure you are carrying the correct equipment when touring in those EU countries.

PREPARING FOR THE ROAD

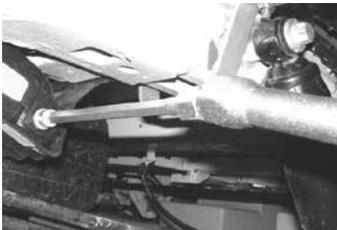
Panel van spare wheel detail	26
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Removal of Fiat spare wheel:

- a. the ground should be flat and adequately firm.
- b. turn the engine off and engage the handbrake.
- c. engage first gear or reverse.

Removal

- a. wheel restraining device screw (fig 1) – rear right side of vehicle
- b. use the extension and wrench provided to operate the wheel restraining device screw (fig 2).
- c. when the wheel is fully lowered (fig 3) and the restraining device screw can turn no more, use the wrench to pull the wheel out (fig 4).
- d. loosen the knob and remove the support to release the wheel (fig 5 & 6).

**Fig. 1****Fig. 2****Fig. 3****Fig. 4****Fig. 5****Fig. 6****Replacement**

Replacement is a reversal of the removal procedure.

⚠ WARNING: Exercise care when handling the wheel due to its weight.

Cruise Control

The driver of the vehicle should always remain seated and in control of the vehicle when the cruise control has been engaged. Never leave the driving seat for any reason when the vehicle is underway.

Parking sensors

Parking sensors are fitted to some vehicles. Please use the information provided. Use the sensors as a guide only. It is the responsibility of the driver to ensure it is safe to reverse the vehicle.

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FIRE AND FIRE ALARM

Fire

Note: Your attention is drawn to the notice affixed inside the wardrobe advising on fire precaution, ventilation and what to do in case of fire.

In case of fire

1. Get everyone out of the motorhome as quickly as possible using whichever exit is the quickest, including windows. Do not stop to collect any personal items.
2. Raise the Alarm. Call the Fire Brigade.
3. Turn off the gas supply valve if it is safe to do so.
4. Turn off the electricity supply at supply point.

Model - si 601 smoke alarm operation

Normal condition

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

Low Battery Condition

⚠ WARNING: Your smoke alarm requires a battery with a sufficient capacity of power to operate correctly. This must also be correctly installed.

Should your smoke alarm enter a low battery condition, the unit will emit an audible 'chirp' once every 40 seconds. When this occurs you must replace the battery immediately. Your smoke alarm will continue to warn of this low battery condition for at least 7 days, however, failure to change the battery after this time would mean your smoke alarm has insufficient power to alert you in a real fire situation.

Battery replacement

⚠ WARNING: Only the following batteries can be used for replacement. Use of a battery other than those recommended below may have a detrimental effect on the detector's operation. Use of a lithium (long-life) battery could provide power for 10 years under normal operating conditions, meaning there is no need for an annual battery change.

Note: The alarm cover can not be installed without a battery fitted.

Note: Upon delivery the battery may be fitted with a protective cover. Please ensure this is removed before use.

Carbon-Zinc type:

Eveready Energizer 1222;
Gold Peak 16045 (UL).

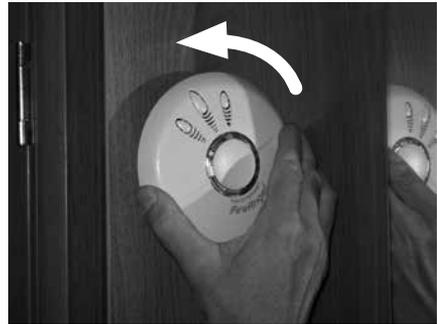
Alkaline Type:

Energizer 522; Duracell MN 1604; Duracell 9V Ultra; Energizer 9V Ultra+; Gold Peak 1604A.

Lithium (long life) type:

Ultralife U9VL

1. Remove the alarm from its mounting plate by turning anti-clockwise



- Remove the existing battery and replace with a new battery from the list on the previous page, making sure that the positive and negative connections are in the correct position. If unsure see the alarm user manual.



- Replace the alarm on its mounting plate, lining up the large central vent on the front of the alarm, with the 'X' that is moulded into the plastic on the mounting plate (if unsure see page 13 of the alarm user manual). Ensure the unit is securely fitted.



- Test your alarm as explained in the next section 'Alarm Test'.

Alarm test

- Press the test button in the centre and release.



- The unit will emit a loud (85dB at 3 meters) alarm for around 5 seconds and stop automatically.



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



FIRE ALARM

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 troubleshooting guide at the end of the user manual supplied.

⚠ WARNING: Test your smoke alarm at least once per week

Your smoke alarm has been designed to be as maintenance - free as possible and although the unit requires only battery maintenance for its entire life, there are several things you must do to keep it working properly.

⚠ WARNING: 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.

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.

⚠ WARNING: 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.

⚠ WARNING: The electronic test button provides a full test of the unit's functionality. DO NOT try to test the alarm with a naked flame, as this may present a potential fire hazard.

⚠ WARNING: Never use portable cooking or heating equipment other than electric heaters that are not of the direct radiant type, as it is a fire and asphyxiation hazard.

⚠ WARNING: Appliances such as cookers must not be used for heating.

Fire Extinguisher

It is recommended that a dry powder fire extinguisher be carried inside your motorhome at all times.

When using a dry powder extinguisher it is suggested that the motorhome be evacuated until the powder has settled, to avoid inhalation.

A fat pan fire should not have a fire extinguisher aimed at it. It should be smothered with a fire blanket.

⚠ WARNING: Provide one dry powder fire extinguisher of an approved type or complying with EN3-7 or ISO 7165, of at least 1kg capacity, by the main exterior door and a fire blanket next to the cooker. Familiarise yourself with the instructions on your fire extinguisher and the local fire precaution arrangements.

Escape paths

It is important that you do not block escape paths to emergency exits with obstructions or hazards.

Children

Do not leave children alone in the motorhome in any event. Keep potentially dangerous items out of reach, as at home e.g. matches and drugs etc.

Ventilation

All motorhomes comply with BS EN 721. The ventilation points on your motorhome are fixed points of ventilation which are required by the European Standards.

All motorhomes have ventilation at high level and low level which have been calculated to suit the individual needs of your motorhome.

High level ventilation is achieved by means of the roof lights and washroom roof ventilators (where applicable). The low level ventilators are positioned in the front or rear bed fascias in van conversions.

Under no circumstances must these vents be blocked or obstructed in any manner as this could lead to insufficient fresh air. In this case the confined atmosphere becomes depleted of oxygen which could lead to dangerous levels of carbon dioxide (CO₂) build up, leading up to the risk of asphyxiation.

The risk of carbon (CO) build up, which is a colourless, odourless and tasteless gas, will also be reduce with ventilation. Carbon monoxide is produced from incomplete combustion and should the CO detector be activated the cause of the incomplete combustion must be investigated prior to reusing the appliance in question.

It is advised that fixed ventilation points are checked and cleaned (if necessary) on a regular basis using a small brush and a domestic vacuum cleaner.

Additional night time ventilation is obtained by releasing the window catches and placing them in the second groove. Note the windows are not sealed from rain in this position.

As the ventilation levels are calculated to suit each model requirements, no modifications should be made which may result in reduced ventilation levels.

 **WARNING:** Do not obstruct ventilation.

Security

Motorhome theft:

The theft of a motorhome can occur in the most unlikely circumstances; from a motorway service area or even an owner's driveway. Secure all windows and doors when your motorhome is unoccupied even if only for a short length of time.

VIN (Vehicle identification Number)

Record your motorhome VIN which can be found on the lower edge of the base vehicle front windscreen and the plate located on the front cross member under the bonnet.

Make a note of these numbers in the space provided at the front of this handbook and make a separate note of the numbers to keep safe at home.

Additional security

Consider fitting any device which might deter intrusion by thieves. Customers are advised to identify their motorhome with a method for subsequent identification if other forms of identification have been altered or removed.

Free crime prevention advice about securing your motorhome, 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.

Tracker

Tracker battery powered retrieve unit

Your vehicle is fitted with a 'TRACKER Battery Powered Retrieve' unit. This is a self contained security device which has been positioned discreetly within the vehicle during the manufacturing process. There are numerous fitting positions for the device, the locations of which are kept secret and known only to TRACKER and the Swift Group.

CO ALARM

This unit has a self contained battery, which has a minimum five year life. The unit draws no power from the vehicle battery or leisure battery. This unit is a tracking device only and is not an alarm.

The tracking device requires an active subscription to be in place with TRACKER. Your vehicle is supplied with a free 3 month subscription (from date of purchase), which is activated once you have registered your details with TRACKER (normally your dealer would do this with you at the time of collection of your new vehicle). If you chose not to register your device the unit is not activated and the vehicle can therefore not be tracked in the event of theft. At the end of the free 3 month subscription period your subscription will end. Owners can however choose to either subscribe to TRACKER for a further 12 months at £60 per year or for a period of five years from date of purchase at £199. The TRACKER unit subscription cannot be subscribed to for longer than five years from the date of purchase and a new TRACKER unit would need to be installed and registered separately after the five year period has elapsed.

If in the unfortunate event your vehicle is stolen you should;

- Notify the police immediately.
- Contact TRACKER and confirm to them that your vehicle has been stolen and provide a police crime number.
- TRACKER will then activate the tracking device in your vehicle.
- The police can then track the vehicle using VHF tracking technology from the tracking computers inside police vehicles and aircraft.
- Once located TRACKER will inform you.

The device works in some (but not all) European countries (further details of which can be obtained from TRACKER). <http://www.TRACKER.co.uk/>

TRACKER's telephone number is 0845 602 2356

CO alarm

Fireangel CO-9D Carbon Monoxide Alarm

 **WARNING:** Please read the full user instructions provided.

Carbon monoxide

Known as the silent killer, Carbon Monoxide is an invisible, odourless and tasteless gas.

What are the symptoms of carbon monoxide poisoning?

Early symptoms of carbon monoxide (CO) poisoning can mimic many common ailments and may easily be confused with flu or simple tiredness. Symptoms to look out for include:

- tiredness
- drowsiness
- headaches
- giddiness
- nausea
- vomiting
- pains in the chest
- breathlessness
- stomach pains
- erratic behaviour
- visual problems

Anyone with these symptoms should immediately turn off all appliances and seek medical attention.

What to do during an alarm

- Keep calm and open the doors and windows to ventilate the caravan.
- Stop using all fuel burning appliances and ensure, if possible, that they are turned off.
- Evacuate the caravan leaving the doors and windows open.
- Do not re-enter the caravan until the alarm has stopped. When exposed to fresh air it can take up to 10 minutes for the sensor to clear and the alarm to stop depending on the

level of carbon monoxide detected.

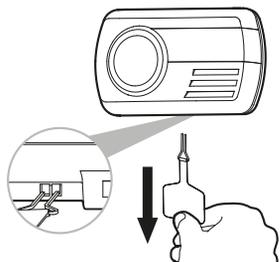
- Get medical help immediately for anyone suffering the effects of carbon monoxide poisoning (headache, nausea), and advise that carbon monoxide poisoning is suspected.
- Do not use the appliance again until it has been checked by an expert. In the case of gas appliances the engineer must be Gas Safe registered.

Power Pack Activation

See diagram below

Your detector comes complete with an integrated power pack that will provide power for its entire operational life. To activate the power pack you need to pull the disabling tab (see image). This will in turn pull out the metal disabling clip, which is attached to the end of the tab, from the disabling socket which is situated on the underside of the detector. Retain the disabling tab for future use by taping it to page 22 of the CO-9D user manual.

When the detector is activated the screen will display all of the icons, then after a few seconds will show the current CO level. The power indicator LED below the  symbol will also flash green once every minute to indicate that the detector is receiving power from the power pack and is fully operational. A  symbol will also flash briefly on the LCD screen approximately once every minute.



Test the sounder, power pack and circuitry by pushing the centre of the Test/Mode button briefly to confirm that the detector is operating properly. The sounder will sound as soon as the button is pressed, and the Alarm LED

will illuminate red indicating that the sounder is working and the power pack is providing power to the unit. You'll notice that the display will switch to temperature mode, this is explained later in the manual, press button again to return to the CO display. This test for the sounder, power pack and circuitry should be performed on a weekly basis. This should be continued for the lifetime of the product.

⚠ WARNING: Prolonged exposure to the sounder in close proximity to your ears may damage your hearing.

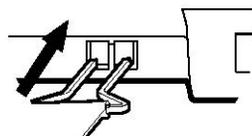
Under normal operating conditions, the power pack will last for the lifetime of the product i.e 7 years. The detector will not protect against the risk of carbon monoxide poisoning when the power pack has drained.

⚠ WARNING: Prolonged exposure to extreme high or low temperatures may reduce the life of the power pack.

Power Pack Deactivation

Your CO-9D is portable making it ideal for taking with you on holiday. You will need to deactivate your detector when traveling or even when storing e.g when decorating. Fitting is reverse of removal. To deactivate the detector the two ends of the metal clip must be inserted into the corresponding holes in the disabling socket located on the underside of the detector (see image). You can ensure that the product is disabled by pressing the test button- If there is no sound from the sounder then the clip has been fitted correctly.

The clip must remain in the disabling socket to keep the power pack deactivated.



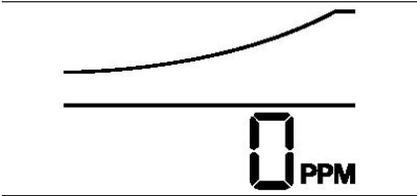
Note: If the disabling tab is no longer available then the clip can be replicated by opening out a thin metal paper clip into a U-shape.

CO ALARM

Operating Features

Standby Mode

The alarm can display two views when in normal standby mode, the current level of CO or the current room temperature in degrees centigrade (°C). When the alarm is showing the current CO Level you will see something similar to the following.



FireAngel's unique digital read out displays the amount of CO that the sensor is detecting shown in parts per million (PPM). It is designed to indicate levels from 10PPM to 999PPM.

Note: Ambient background levels between 0PPM and 10PPM will show as 0PPM

When the alarm is showing the current temperature you will see something similar to the following.



In both modes you will notice a  symbol appear briefly in the top left hand corner of the screen once every minute. This is an additional indication to show you that the alarm is operating as well as the flashing green LED.

To switch between CO and temperature view, simply press the Test/Mode button briefly. The unit will also sound when pressing the button to switch between the two display modes.

You will also notice that when switching between modes the display will change

slightly, this is because the alarm is displaying the Peak Level CO reading that it has recorded in the last 4 weeks, please see the following peak level reading feature section for further description.

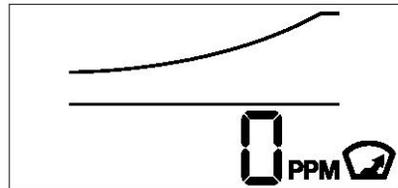
Note: If the alarm is in temperature view and detects CO it will automatically switch back to CO display mode.

Power pack, sounder and circuitry test

Pressing the Test/Mode button will also test the power pack, sounder and circuitry of the alarm. The unit will sound and the alarm LED below  will illuminate red. You should perform this test once per week.

Peak Level Reading feature.

The alarm will record the highest reading of CO that it has detected in the last 4 weeks. This information is useful if your alarm has sounded so you can see the highest level of CO detected during that time. It is also useful to check periodically to see if a readable level of CO has been detected for a short time, but not long enough to trigger a full alarm. The peak level reading is shown briefly every time you press the Test/Mode button and will look something like the image below.

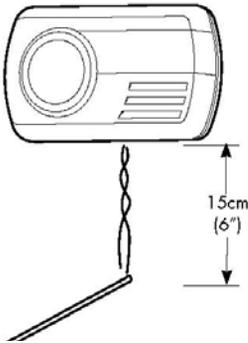


Note: It is possible and quite normal for the peak level to remain at 0ppm, i.e. this simply means that the alarm has not detected any CO in the last 4 weeks.

The Peak Level reading will be reset to 0ppm whenever a Sensor Test is carried out. (See the next section for Sensor Test).

Sensor Testing

⚠ CAUTION: Sensor testing should only be performed by a responsible adult. This test should only be performed once a month. Excessive testing will shorten the life of the power pack.



Note: We suggest the use of an incense stick or cigarette as the way in which these products burn produces a readable level of carbon monoxide. A readable level of carbon monoxide will not be given off by other sources of smoke, for example an extinguished candle or match.

Step 1: If the alarm is wall mounted unhook it from the fixing screws.

Step 2: Hold the Test/Mode button down until the spanner icon appears in the bottom left hand corner of the screen and the bar graph 'scans' from left to right. This indicates the alarm is in sensor test mode where the sampling rate of the sensor has increased and the alarm can be tested using a known source of CO.

Step 3: Light an incense stick or cigarette using a match or lighter. Extinguish the lighter, or put out the match and place it into a dish of water.

Step 4: Hold the incense stick or burning cigarette 15cm (6 inches) below the

detector, so that the smoke goes into the holes at the bottom of the detector. As the smoke gets into the alarm the display will show the amount of CO being detected. When the level of CO in the sensor reaches 50ppm the alarm will sound a single alarm cycle, this confirms that the sensor is working correctly and is the end of the sensor test. The alarm will return to normal standby mode.

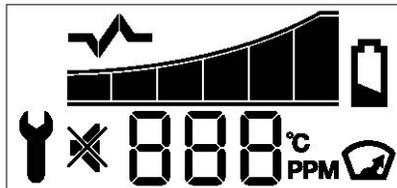
Step 5: Put out the incense stick or cigarette by placing it into a dish of water. Ensure that all flames have been extinguished.

Note: If the level of CO in the sensor doesn't reach 50ppm then the Sensor Test mode will time out and finish automatically after 3 minutes. Even if the level doesn't reach 50ppm, as long as the display shows a reading of CO then you can be confident that the alarm is working correctly. If you have any questions about testing the sensor please contact the FireAngel technical support team

Understanding the Product's Indicators

Digital Display

The LCD screen has many icons with one or more being shown at any one time.



Bar Graph to show early build up of CO.

To understand the role of the product indicators please refer to section 'Carbon Monoxide and how it can affect your family' on page 3 of the CO-9D User Manual. The alarm has a bar graph which mimics the way CO levels build up in the blood stream. The response times of the alarm are determined by

SAFETY & SECURITY

the European Standard BS EN 50291:2001 so the alarm will only sound when it has detected CO for a prescribed length of time, the higher the level of CO the quicker the alarm must sound. However with FireAngel's CO-9D there is an early visual warning that CO is present. When CO is first detected the alarm indicates it's presence by displaying the level on the screen in parts per million (ppm). If CO continues to be present additional bars will appear on the graph. When the graph is full (i.e. the 6th segment is shown the unit will sound a loud audible alarm (85 dB at 1m (3 feet)) and the Alarm LED below the symbol on the front of the detector will flash red once every second.



The Alarm will sound

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

Alarm silence



It is possible to temporarily silence the alarm up to two times if the level of CO that triggered the alarm is less than 200ppm. After ventilating the property you can temporarily silence the alarm by pressing the Test/Mode button, the alarm will stop and the silence mode symbol will appear on the screen. The silence mode will last for up to 3 minutes. If the CO level remains too high the alarm will trigger again or if the level of CO rises above 200ppm then the detector will automatically re-enter alarm mode. If the level of CO has fallen to a satisfactory level the silence mode icon will disappear, the unit will exit alarm mode and the segments of the bar graph will slowly disappear as the CO in the sensor clears.

Alarm in absence:



If the Peak level reading symbol is showing on the screen but there is no full alarm sound and you are not pressing the test button, then your detector is warning that it has detected Carbon Monoxide in your absence. Immediately vacate the premises and seek medical attention for anyone suffering the effects of CO poisoning (headache, nausea). Treat this as a serious warning. Call a qualified technician and have the problem investigated and rectified immediately.

Error signal



The unit continuously checks the settings of its sensor and circuitry. If any of these settings are found to be incorrect, the detector will emit a **single chirp** once per minute and the display will show "Err" for error and an error code, cycling between "Err" and the particular error code.



Low power pack signal

If the power pack becomes low then the detector will emit a single chirp once per minute and the low power pack icon will flash on the screen.

⚠ IMPORTANT: A single chirp once per minute together with an error signal 14 or low power pack warning does NOT mean that the detector has detected carbon monoxide.

If you experience an error condition or low power pack warning and the product is still within warranty then contact FireAngel technical support. If the product is no longer in warranty **replace immediately!**

⚠ IMPORTANT: The selected power pack was chosen to provide power beyond the lifetime of the product, in particular the sensor (under normal operating conditions). The operational life of the sensor is seven years, for this reason, the detector should be replaced after seven years from the date of installation.

FireAngel Technical Support Line

9.00am – 5.00pm, Monday – Friday

**Telephone: 0800 141 2561
(1-800 523171 in EIRE)**

e-mail: technicalsupport@fireangel.co.uk

papering, or performing any other activities using substances that emit strong fumes. Remember to remove it from the bag and replace the detector when these activities are finished.

Failure of any test should be reported to the Fireangel Technical Support Team. Do not attempt to repair your CO detector. Do not remove any screws or open the main casing of your detector. Any attempt to do so may cause malfunction and will invalidate the warranty.

Maintenance

Your detector will alert you to potentially hazardous CO concentrations in your motorhome when maintained properly. To maintain your FireAngel detector in proper working order, and to ensure that the sensor will last for the lifetime of the product, it is recommended that you:

- Test the sounder, power pack and circuitry of your detector at least once per week by pressing the Test/Reset button briefly (see above).
- Perform the Sensor Test once every month (See p36).
- Keep the detector free of dust by gently vacuuming the case with a soft brush attachment once per month.

To prevent the possibility of contaminating the sensor in your detector and thus affecting its reliability:

- Never use cleaning solutions on your detector. Simply wipe with a slightly damp cloth.
- Do not paint the detector.
- Do not spray aerosols on or near the detector.
- Do not use any solvent based products near the detector.
- Move the detector to a safe location and store in a plastic bag before painting, wall

SAFETY & SECURITY

What to do in the event of an alarm

⚠ WARNING: A loud alarm is a warning that unusually high and potentially lethal levels of carbon monoxide are present. Never ignore this alarm, further exposure can be fatal. Immediately check residents for symptoms of carbon monoxide poisoning, and contact the proper authorities to resolve all CO problems.

NEVER IGNORE ANY ALARM.

Please carefully review this owner's manual to ensure that you know what actions to take in the event of an alarm.

What to do during an alarm

Within 3 minutes when exposed to a minimum of 300ppm of CO.

- Keep calm and open the doors and windows to ventilate the property.
- Stop using all fuel burning appliances and ensure, if possible, that they are turned off
- Evacuate the motorhome leaving the doors and windows open.
- Do not re-enter the motorhome until the alarm has stopped. When exposed to fresh air it can take up to 10 minutes for the sensor to clear and the alarm to stop depending on the level of carbon monoxide detected.
- Get medical help immediately for anyone suffering the effects of carbon monoxide poisoning (headache, nausea), and advise that carbon monoxide poisoning is suspected.
- Do not use the appliance again until it has been checked by an expert. In the case of gas appliances the engineer must be registered.

Note: If the level of CO in the sensor doesn't reach 50ppm then the Sensor Test mode will time out and finish automatically after 3 minutes. Even if the level doesn't reach 50ppm, as long as the display shows a reading of CO then you can be confident that the alarm is working correctly. If you have any questions about testing the sensor please contact the technical support team

Disposal

Waste electrical products should not be disposed of with regular household waste. Please recycle where facilities exist. Check with your local authority, retailer or manufacturer for recycling/disposal advice as regional variations apply. The power pack should be deactivated before disposal. To do this, insert the two ends of the metal clip on the end of the disabling tab back in to the socket located on the underside of the detector. If the disabling tab is no longer available then the clip can be replicated by opening out a thin metal paperclip into a U-shape. You can also return your carbon monoxide detector to Fireangel for disposal. For return address contact Fireangel Technical Support. Please include a note confirming the product is being returned for disposal.

Technical Information

Detector Specifications: Model CO-9D

Sensor Type: Electrochemical

Sensor Life: 7 Years

Alarm Sound Level: 85dB at 1 metre (3 feet)

Power Pack Life: 7 years (Life of product)

Temperature Range: -10°C (14°F) to 40°C (104°F)

Operating Humidity Range: 30 - 90% RH

Weight: 120 grams (4.23oz)

Certified to: BS EN 50291:2001

This FireAngel carbon monoxide detector is designed to continuously monitor for CO. Its response times meet the requirements of BSI standard BS EN 50291:2001.

⚠ WARNING: DO NOT ATTEMPT TO OPEN - DO NOT BURN



⚠ WARNING: APPARATUS CONFORMING TO THIS STANDARD MAY NOT PROTECT PEOPLE WHO ARE AT SPECIAL RISK FROM CARBON MONOXIDE EXPOSURE BY REASON OF AGE, PREGNANCY OR MEDICAL CONDITION. IF IN DOUBT, CONSULT YOUR DOCTOR.

A CARBON MONOXIDE DETECTOR IS NOT A SUBSTITUTE FOR A SMOKE ALARM OR A COMBUSTIBLE GAS DETECTOR.

REPLACE UNIT AFTER 7 YEARS OF OPERATION.

7 Year Warranty

FireAngel Ltd warrants to the original purchaser that its enclosed carbon monoxide alarm be free from defects in materials and workmanship under normal residential use and service for a period of 7 (seven) years from the date of purchase. Provided it is returned with postage paid and proof of purchase date, FireAngel Ltd hereby warrants that during the 7 (seven) year period commencing from the date of purchase FireAngel Ltd, at its discretion, agrees to replace the unit free of charge. The warranty on any replacement CO-9D alarm, will last for the remainder of the period of the original warranty in respect of the alarm originally purchased – that is from the date of original purchase and not from the date of receipt of the replacement product. FireAngel Ltd reserves the right to offer an alternative product similar to that being replaced if the original model is no longer available or in stock. This warranty applies to the original retail purchaser from the date of original retail purchase and is not transferable. Proof of purchase is required.

This warranty does not cover damage resulting from accident, misuse, disassembly, abuse or lack of reasonable care of the product, or applications not in accordance with the user manual. It does not cover events and conditions outside of FireAngel Ltd's control, such as Acts of God (fire, severe weather etc.). It does not apply to retail stores, service centres or any distributors or agents. FireAngel Ltd will not recognise any changes to this warranty by third parties.

FireAngel Ltd shall not be liable for any incidental or consequential damages caused by the breach of any expressed or implied warranty. Except to the extent prohibited by applicable law, any implied warranty of merchantability or fitness for a particular purpose is limited in duration for 7 (seven) years.

This warranty does not affect your statutory rights. Except for death or personal injury, FireAngel Ltd shall not be liable for any loss of use, damage, cost or expense relating to this product or for any indirect, or consequential loss, damages or costs incurred by you or any other user of this product.

SAFETY & SECURITY

Positioning the Motorhome 44

POSITIONING THE MOTORHOME

Note: Check and observe site regulations.

Keep to roadways unless otherwise directed. Adhere to speed limits. Note that these are generally 10mph.

Remember that the stopping distance on grass is considerably greater than on tarmac

Only a person in possession of a current driving licence may drive on the site.

Selecting a pitch

Do not pitch in such a position that your motorhome will obstruct others coming in.

Try to choose an area which is dry, reasonably level and preferably with a hard base.

If you have no alternative but to pitch on a slope try to ensure that you are facing down the slope, for when you leave.

Levelling the motorhome

Levelling must be carried out in both directions for the refrigerator and other equipment to function correctly. Stepped levelling boards or proprietary ramps are ideal for this purpose.



Fig. A

Awnings and Tents

Awnings and tents should only be used when permission has been obtained. When on grass and staying for more than a few days the ground sheet and/or side flaps of awnings should be periodically raised in order to avoid damage to the ground.

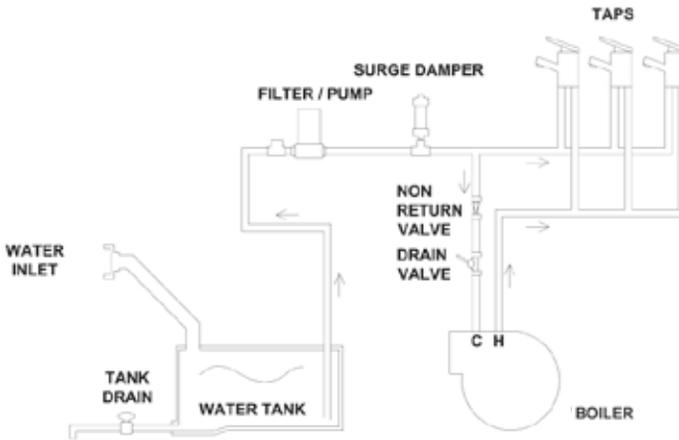
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WATER SYSTEM

Water system - Introduction

All Swift Group motorhome water systems have been designed around a pump fitted within the motorhome. This pump draws water from an under floor or internal water tank, to provide water pressure within the water system, whenever it is switched on and water is available.

The schematic below shows the basic configuration of the water system:



When power is supplied to the pump, it will draw water from the water tank, and pump it to the motorhome taps, shower and water heater.

The pump is fitted with its own pressure switch, and the pump will continue to pump water, until the pressure of water on the output of the pump reaches a pre-set level. For this pressure to be achieved, the taps must be closed.

When the taps are opened, water will leave the tap via the spout, and the pressure in the pipes between the pump and the taps will reduce. Because of this reduction in pressure, the pressure switch on the pump will switch back on and the pump will again run to pump more water.

Close to the pump, the water under pressure is split into two paths:

1. Through blue water pipes routed directly to the cold connection of each tap.
2. To the water heater.

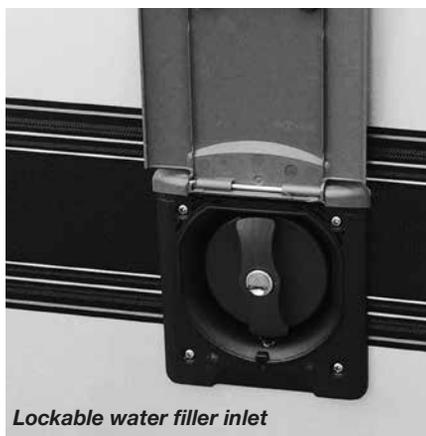
Water from the pump enters the bottom of the water heater. Once the water fills the water heater (typically 10 litres), water then leaves the water heater via a connection at the top of that water heater. This water, which is still under pressure, then routes to the hot connection of each tap via the red pipes.

To winterise the system please see separate details later in this handbook.

Fresh water system

1. All fittings, including the holding tank, water pipes, taps and connections are of food quality material (to BS6920) and therefore, should not affect the quality of the water used. It is recommended however, that the system is flushed through twice before it is used for the first time, and always cleaned/flushed after it has stood unused for a period of time (eg over the winter period). Care has been taken (using smooth bore bore pipes etc) to eliminate as many water traps as possible.
2. When filling the fresh water system remember to check that the water source is suitable for use as drinking water and, if you are using a hose pipe or water carrier, that it is also made from nontoxic materials (preferably food quality material).
3. The fresh water tank may be drained either via a plug in the base of the tank accessible via the cleaning hatch or by the drain tap situated externally below the side skirts, or internally inside the furniture (model specific).

⚠ WARNING: The fresh water system is pressurised by a pump which will continue to operate until it senses a pre-set pressure in the system. If the fresh water tank is completely empty the pump will be unable to pressurise the system and will operate continuously. In this situation it is essential that, in order to avoid damage to the pump, it is switched off using the pump isolator switch on the distribution panel until such time as the water tank has been filled.



Lockable water filler inlet

Fresh Water Tank

Your motorhome is fitted with a water tank filled from the outside via a lockable water filler cap. When filling, use a hose manufactured from non toxic material, to prevent tainting of the water. Remember, if the water heater has been drained it will require 10 litre (0.2 gal) of water to fill it.

External 12v Fill Socket

Depending on specification your motorhome may be fitted with an external 12v socket which can be used to attach an external 12V pump.



CLEANING WATER SYSTEM

Priming the Water System.

1. Close the water tank drain valve or re-fit the drain bung. (Model specific)
2. Fill the water tank with water.
3. Close the water heater drain valve (see boiler instructions in the fitted equipment section)
4. Open all the taps except the shower tap. Mixer taps should be opened in the central position so that both the hot and cold pipes are purged of air. Ensure the tap spouts are over the sinks.
5. Turn on the pump using the button on the control panel (See pump button in paragraph 2.5 of the Electrics section).
6. Turn each tap off in turn as and when the air is expelled and the water runs smoothly from each tap. Move the mixer taps to hot and then cold to check that the air is out of both the hot and cold pipes before turning them off.
7. Whilst holding the shower head down towards the shower drain, open the shower tap and shower head tap until all the air is expelled and the water runs smoothly. Turn the shower taps off.
8. Top up the fresh tank with water.

Please note that priming the system will automatically fill the water heater with water.

Please ensure all taps are fully turned off when not in use (except when winterising).

Note: All tanks are fitted with a breather which acts as an overflow. Overfilling a tank will result in water being expelled from the overflow.

Cleaning water system

Clean the water system at the start and end of the season with sterilising fluid.

Sterilising

When cleaning the water system at the start or the end of the season it is advisable to use a suitable sterilising fluid available from your motorhome dealer

Flush the system thoroughly to remove the effective fluid traces.

When water is first introduced, or the water supply in the internal tank, runs out, air will be present in the pipework. It is important that every tap is run to remove any air in the system before, for instance, the shower is used. Air left in pipework local to a tap can act as an accumulator and affect the ratio of hot and cold water flowing from other taps or shower mixers in the system.

System care

Allowing water to freeze in the system may result in damage to the pump and plumbing system.

Non-Toxic antifreeze for potable water may be used with Truma pumps. Follow manufacturers recommendations.

Do not use automotive antifreeze to winterize potable water systems.

These solutions are highly toxic and may cause serious injury or death if ingested.

Sanitising

The water systems, and in particular storage tanks, in motorhomes are susceptible to contamination by bacteria if care is not taken with their use and cleaning. The symptoms caused by bacterial contamination are not purely limited to gastro-intestinal diseases, but may also manifest themselves as ear, nose, throat, eye or skin infections. It is therefore important that you carry out the following procedure prior to using the motorhome each time, even if you boil or filter all water you use for drinking.

Separate Water Containers

1. All water remaining in the container should be disposed of so that the container is empty.
2. The outside of the container 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.
3. Water should be put in the container, swirled around, then emptied out.
4. The container should then be totally filled with water containing an appropriate sterilant solution and allowed to stand for the recommended contact time
5. The solution should be emptied from the container.
6. The opening of the container should be cleaned thoroughly with an appropriate prepared wipe impregnated with a sterilant.
7. The container should be inverted whilst stored overnight (if possible).
8. The container must be filled with mains water only and mains water only should be used for the above cleaning procedure.
9. On no account should garden hoses be used to fill water tanks.

For Systems:

1. Drain down the system (open all taps to allow air in, enabling the system to drain quickly).
2. 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/ sterilant solution).
3. Fill the water system with a disinfectant/ sterilant solution (check that the solution at full strength appears at all taps/showers). Allow to stand for the recommended period of time.
4. Drain the system completely.
5. Thoroughly clean the outside of all taps/ connectors with a cloth soaked in the disinfectant/sterilant.
6. Flush the system through with clean drinking water until no traces of disinfectant/sterilant can be detected at any tap.

Suitable sterilising chemicals are available from your motorhome dealer, accessory shop, chemist or home-brew shops. It is not, however, recommended to use bleach or sodium metabisulphite.

Do not use products containing aggressive agents for sterilising the water system. Always use products designed for use within stainless steel tanks available from your motorhome dealer.

Note: Never use the water heating system when disinfectant /sterilising fluid is present. Doing so may damage the system.

Waste water system

1. The waste water holding tank is secured underneath the chassis of your motorhome and is gravity fed.
2. In order to eliminate unpleasant odours as much as possible, only smooth bore pipes are used.

However, should the waste water tank be overfilled, it is possible the waste water will backfill the drain pipes until it eventually appears in the shower base. In order to prevent this, please take note of part 3.

3. The waste water gauge shows the level of the tank in quarter or half increments, it is therefore, recommended that the waste water tank is checked on a daily basis, emptying when required. This is done by opening the valve located just beneath the side skirt on the exterior of the Motorhome or by turning the handle located inside the vehicle at floor level behind the rear axle, usually found in bed box or wardrobe base (model dependant).

It should be emptied either directly, or via a waste water container (not supplied) into a designated waste water area.

PRESSURE SWITCH

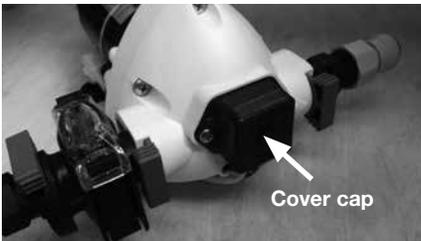
Pressure Switch

The purpose of a pressure switch is to monitor the pressure on the outlet side of the pump. When a tap is closed, and the pump continues to run, there is an increase of pressure in the system, and when that pressure reaches a pre-set limit, the pressure switch will turn the pump off.

Pressure switch adjustment

Pressure Switch Adjustment, Truma/Flo-Jet pump. (Normally Grey upper section with White lower section/valve housing)

- All of the Truma/Flo-Jet pumps used by Swift are pre-set at 25psi - 31psi.
- To further adjust the pressure switch setting, a cover cap must be first be removed from the end of the pump to reveal a pressure adjusting screw, as shown in the photos. A maximum of 1/4 turn clockwise or anti-clockwise, from the factory setting, is advised. Turning the screw clockwise 1/4 turn will increase the pressure switch cut-out pressure, turning the screw anti-clockwise will reduce the pressure setting.
- Please note a second screw mounted below the cover cap is set in position with threadlock, this should not be disturbed.



The pump may have to be removed to gain access to the adjusting screw. Drain the water system before removing the pump.

To remove the pump pull the blue taps at right angles to the pipe work and lift the pump out.

Troubleshooting

Pump will not start, when the tap is opened:

- Check fuse(s).
- Check power source(s), and ensure there is sufficient voltage to run the pump.
- Ensure 'pump' LED is illuminated.
- Using a multi-meter, ensure there is power at the pump. If not, refer to your dealer as there maybe damaged cabling or a fault with the fusebox.
- Is the pump hot? If so, allow to cool before retrying.
- Has the vehicle been stored over winter? was it correctly winterised? If no, the pump may have frozen, causing permanent damage.
- The pressure switch may need adjusting. (See pressure switch paragraph in this section for how to do this)

Pump runs, but will not pressurise system (i.e. no or little water being discharged from taps) - Not Pulsing:

- Ensure that there is water in the fresh water tank.
- Check in-line filter is free from debris and correctly fitted.
- Ensure water system has been primed correctly, (see priming the water system page 48), and there are no air-locks present.
- Ensure there are no restrictions in the plumbing.
- Using a multi-meter, ensure there is power at the pump. If not, refer to your dealer as there maybe damaged cabling or a fault with the fusebox.

- Ensure the inlet side of the pump is watertight and not allowing air into the system.
- Using a multimeter check that the voltage is between 10 and 14.5 volts. If not, refer to your dealer.

Pump continues to run (for more than 5 seconds) after taps are closed or pump turns on for no reason:

- Check for leaks on the high pressure side of the pump.
- Ensure water system has been primed correctly, as per the handbook, and there are no air-locks present.
- Ensure the pump is securely mounted.
- Ensure the piping on the high pressure side of the pump is in good condition (not blowing or deforming).
- The pressure switch may need adjusting. (See pressure switch paragraph in this section for how to do this)

Noisy or rough operation

- Check for leaks on the high pressure and low pressure side of the pump.
- Ensure that all pipes (especially those within 150mm of the pump) are not touching any furniture.
- Ensure the pump is securely mounted

Pump rapidly cycles (switches on or off) or water pulses from taps, including temperature pulsing:

- Check for leaks on the high pressure and low pressure side of the pump.
- Ensure there are no restrictions in the plumbing
- The pressure switch may need adjusting. (See pressure switch paragraph in this section for how to do this)

Water level sensor & cleaning

Principle

The sensor, fitted to Swift Group motorhomes are pre-fitted to water tanks, and link to the control unit, via a pre-fitted wiring harness. The sensors, which consist of a number of stainless steel studs, at different positions, are immersed in the fresh or waste water, and use the conductivity of water, between the studs, to provide a reading to the control unit.

The sensors are 'digital', in that while the conductivity (resistance) value can vary, the fusebox will register any conductivity between studs and the various different studs, indicating water present.

Normally, even if the studs are dirty, and providing the studs have not bridged by a foreign object, a circuit will still be delivered back to the control unit and a water level displayed.

Sensor cleaning

The first step, in case of fault diagnosis, is to clean the sensor studs. False water level readings at the control unit can be caused by calcium build-up or foreign objects within the tank bridging the studs. (Especially with waste tanks).

To clean the sensor:

⚠ WARNING: Only use food safe plastic mesh scourers, which are suitable for domestic use, for cleaning the sensor studs.

1. Remove the sensor from the tank
2. Check the studs for build up of contamination
3. Use clean soapy water
4. Place scourer in water to dampen
5. Apply scourer to the sensor probes with limited pressure
6. Rub sensor studs removing contamination
7. Swill sensor studs with fresh clean water
8. Replace sensor into tank.

WATER SYSTEM FAULT FINDING

Water

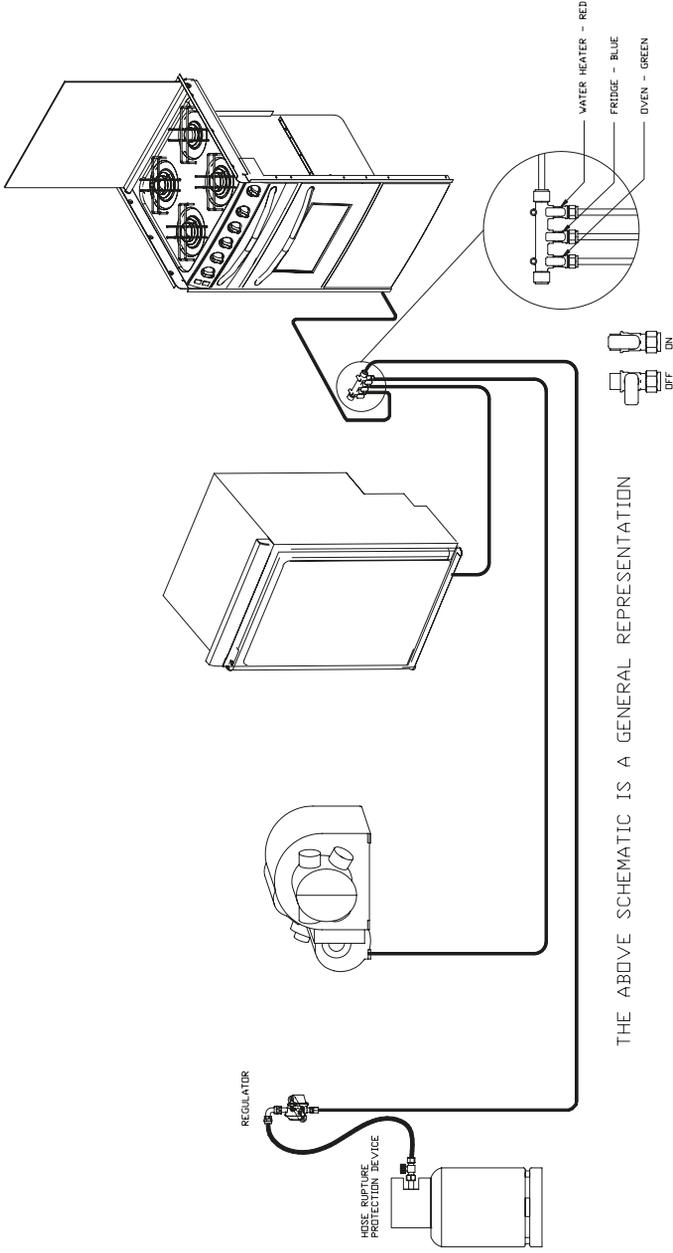
Fault	Cause	Remedy
Water not flowing from any tap when operated but pump runs	<p>Freshwater tank empty</p> <p>Pump wired in reverse</p> <p>Pipe inlet or outlet pipe disconnected</p> <p>Pump pipes restricted by kinking</p> <p>Blockage in pump inlet or outlet pipe</p> <p>Blocked pump filter</p> <p>Air leak in suction line to pump</p>	<p>Check</p> <p>Check wiring, refer to pump manufacturers instructions</p> <p>Check connections</p> <p>Check pipes run</p> <p>Check, starting inside freshwater tank</p> <p>Dismantle and clean filter. See pump manufactures instructions.</p> <p>Check condition of pipe and pipe joints between the water tank and the pump.</p>
Pump does not run	<p>Pump incorrectly wired</p> <p>Pump fuse blown</p> <p>Battery disconnected</p> <p>Pump seized or overheated</p> <p>Pressure pump sensing switch may have failed</p> <p>Contacts may be faulty</p> <p>Wiring connections may be faulty</p>	<p>Refer to pump manufacturers instructions</p> <p>Check wiring connection and then replace with fuse of correct rating</p> <p>Check connections</p> <p>Refer to pump manufacturers servicing instructions</p> <p>Refer to pump manufacturers servicing instructions</p> <p>Check contacts in plug and socket are clean and making contact</p> <p>Check wiring connections</p>
Water flows from cold tap but not from hot	<p>Blockage in hot pipeline</p> <p>Heater inlet or outlet pipes kinked preventing flow</p> <p>Hot tap failed or blocked</p> <p>Heater non-return valve jammed</p>	<p>Disconnect pipes and inspect</p> <p>Check and re-route if necessary.</p> <p>Disconnect and inspect</p> <p>Seek service attention</p>

Water

	Cause	Remedy
Water flows from hot tap but has reduced flow from cold	<p>Cold water pipe kinked preventing flow</p> <p>Blockage in cold pipe line</p> <p>Cold tap not connected</p> <p>Cold tap failed or blocked</p>	<p>Check and re-route if necessary</p> <p>Disconnect pipes after 1st connector and check up to tap</p> <p>Refer to installation instructions</p> <p>Disconnect and inspect</p>
Reduced flow from both hot and cold taps	<p>Battery condition low causing pump to run slowly</p> <p>If new taps have been fitted they may be restricting flow</p> <p>Pump needs servicing</p> <p>Partially blocked pump filter or in-line filter, if fitted</p> <p>Pump outlet pipe kinked restricting flow</p> <p>Water leak</p>	<p>Check battery state of charge, refer to electrical supply note</p> <p>Disconnect and check that they have at least 1/4" (6.3mm) bore</p> <p>Refer to pump servicing instructions</p> <p>Dismantle and clean if necessary</p> <p>Check and re-route if necessary</p> <p>Check all water connections</p>
Reduced flow from either tap	<p>Pipe kinking restricting flow</p> <p>Bore size difference in taps</p>	<p>Check and re-route if necessary</p> <p>Use taps of equal bore size</p>
If pump motor runs steadily and will not stop	<p>Battery voltage may be too low (below 10.5 volts)</p>	<p>Check that there is water in the container</p> <p>Adjust switch and/or re-charge battery</p> <p>Check all connections in pipework</p>

GAS SCHEMATIC

*Typical gas schematic drawing
with combi boiler*



THE ABOVE SCHEMATIC IS A GENERAL REPRESENTATION

Gas

General information

Gas Cylinders

Bottled Liquefied Petroleum Gas (LPG) is the most convenient portable source of fuel for your vehicle.

The gas cylinder, cooking and heating appliances should be isolated when travelling unless your motohome is fitted with en-route heating.

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.

The LPG system should be inspected annually by a competent person.

Only use gas cylinders that are located within their dedicated position within the gas bottle housing never extend the hose - hose lengths must not exceed 400mm.

Your vehicle is supplied with a wall mounted gas regulator plumbed inside the gas bottle compartment. The regulator and all appliances work at a harmonised 30mb pressure, which work with Butane and Propane gas.

Pressure regulation system in this vehicle has a fixed working pressure of 30 mbar with a flow rate of 1.2 kg/H and complies with the requirements of EN 12864 annex D.

We do not recommend the use of an inline LPG BBQ with the 1.2kg/H regulator when other LPG appliances are in use.

Gas Hoses

High-pressure hoses or pigtails as they are called must be used with the new style regulator.

High-pressure hoses incorporate a safety shut off valve for the use of the en-route heating system

LPG cylinder i.e. Propane, Butane, BP and Camping Gaz cylinders all have unique bottle adaptor connections. It is important to check you have the correct hose and adaptor to suit your gas cylinders.

Push on hoses are no longer permitted under the latest regulations.

The new high-pressure hoses have threaded connections and must be securely attached to the regulator and to the gas cylinder.

Ensure that there is a constant rise in the flexible gas hose between the gas cylinder outlet and the regulator elbow.

⚠ WARNING: Inspect flexible gas hose(s) regularly for deterioration and renew as necessary with the approved type, in any case no later than 5 years after the date of manufacture marked on the hose. When replacing the en-route hose ensure the new hose incorporates a safety shut off valve (Hose rupture protection)

⚠ WARNING: Ensure that the high pressure hose is not excessively twisted or under stress when connected to the LPG cylinders and regulator.

⚠ WARNING: Always ensure the gas supply is isolated at the LPG cylinder (and not at the regulator) whilst the vehicle is in storage for any period. It is important to ensure that the high pressure gas hose has a continuous rise from the bottle cylinder to the regulator to allow any condensate to fall back into the gas bottle cylinder.

Cylinder compartment

All cylinder compartments have four plastic mouldings per cylinder position fitted to the floor of the compartment that are designed to fit both steel and BP Gas Light cylinders. Two straps are provided for retaining the bodies of the cylinders at mid to high level.

GAS

Types of gas

Propane

Propane is supplied in red, or partly red cylinders which have a female left hand threaded connector.

Scandinavian countries use the same connector.

Germany and Austria supply propane with a male connection.

Propane will work at temperatures as low as -40°C and is therefore suitable for all winter motorhoming.

Note: Swift recommend that 6kg CalorLite propane gas bottles are used.

Butane

Butane is supplied in the U.K. in green or blue cylinders.

All these have a male left hand thread

EXCEPT for Camping Gaz which has a special female right hand thread and Calor 7kg and 15kg and aluminium bottles which have a special clip-on connection.

Continental cylinders usually have a male left hand thread similar to but not identical with U.K. butane.

Butane is only suitable for use at temperatures down to 2°C but will not work below that.

Note: A hose suitable for use with propane has been supplied with your motorhome.

En-route heating

The majority of Swift Group motorhomes are equipped with an LPG en-route heating system. The en-route heating system is installed with additional safety features.

⚠ WARNING: When re-fuelling your motorhome, switch off the heater and close the cylinder valve.

Safety features

- MonoControl CS regulator incorporating a crash sensor which stops the gas flow in the event of the motorhome being involved in a traffic collision.
- Gas flow monitor
- Hose rupture protection is installed.

The full system is Homologated in compliance with European Directive 2001/ 56/ EC,

Operating instructions

Priming the gas system

- Open the cylinder's valve. (1)
- Firmly press the hose rupture protection (green button) on the high pressure hose. (2) If necessary (e.g. if the regulator has been knocked when replacing a LPG cylinder) press the green reset button on the regulator. (3)
- Start the gas-burning devices if desired.

Note: The regulator should be replaced no more than ten years after manufacture.

Changing a gas cylinder

Please use the correct size spanner for the gas hose connectors as this will prevent damage to the screw fittings and ensure that the fitting is tightened sufficiently.

- Close the empty gas cylinder's valve
- Remove the high pressure hose from the gas cylinder.
- Attach the high pressure hose to the full gas cylinder.
- Open the full cylinder's valve.
- Press the hose-break safety device and the gas-flow monitor (see: Priming the gas system).

Check the hose connection to the cylinder valve for leaks.

⚠ WARNING: To ensure the safe working of the en-route heating any replacement high pressure hoses must be of the same type as originally fitted. They must have the safety valve to ensure that the gas does not leak out in the event of damage to the gas pipe work in the event of a traffic collision.

⚠ WARNING: When travelling using the en-route system all other LPG appliance shut off valves must be in the closed position including the fridge, cooker, water heater etc.

Note: It is dangerous and illegal to operate other LPG appliances whilst travelling. Service and repairs must only be carried out by a competent service engineer.

Gas safety advice

⚠ WARNING: If you smell gas or suspect a leak or in the event of a fire and if it is safe to do so, isolate the gas appliances and turn off the gas bottles at the regulator. Evacuate the motorhome and ventilate. Seek professional advice as to the cause of the leak.

Facts about LPG

- LPG is not poisonous.
- Bi-products are harmless.
- There is danger if all air and oxygen were excluded.
- (Ventilation holes must be kept clear at all times).
- LPG has been given a smell by the manufacturers in order to identify leaks.

Awning Spaces LPG Appliance Exhaust

There is no danger of pollution of an enclosed awning space by the LPG exhaust from a refrigerator venting into it, as awning spaces are generally well ventilated.

Space heaters may produce sufficient exhaust to pollute the awning space, if it is totally

enclosed, from a general comfort, smell and hygiene point of view. In the extreme case there could be a build up of carbon dioxide to a dangerous level.

Motorhome owners are advised to allow some fresh air circulation in the awning space when such appliances are in use.

General Safety Notes

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

- Extinguish all naked flames.
- Do not smoke.
- Switch off the appliance and gas cylinder.
- Open the windows.
- Do not operate any electrical switches.
- Have the entire system checked by an expert.

Precautions

- Never look for a leak with a match. Always use a soap solution or its equivalent when testing connections. Do not operate any electrical apparatus whatsoever, especially light switches. If the leak is not obvious, the motorhome should be evacuated and qualified personnel consulted.
- Avoid naked lights when connecting or changing a cylinder.
- Check the flexible hose frequently.
- The gas is heavier than air and therefore sinks to the lowest point.
- Keep bottle gas containers outside (and protected against frost). If they must be kept inside make sure they are well away from heat.

⚠ WARNING: Do not use appliances with a different working pressure to 30mbar.

⚠ WARNING: Maintain adequate spacing of combustible materials from sources of heat.

GAS

⚠ WARNING: Do not use independent portable gas appliances inside the vehicle. Cookers shall not be used as heaters

⚠ WARNING: A BBQ point inlet valve, if fitted, must only be used for the connection of portable LPG appliances.

Always read individual appliance instructions

Connection

Ensure that the gas regulator hose is correctly connected to the gas cylinder in gas bottle compartment and that the hose connection is tight.

Gas cylinders must be fully located, seated at the base of the bottles and restrained by the straps provided in the dedicated compartment position. Straps are positioned to suit 6kg, 7kg and 13kg bottles.

⚠ WARNING: If using cylinders other than those recommended, the user must ensure these are adequately supported, ventilation openings must not be obstructed and the cylinders must not cause damage to other fixtures and fittings located in the compartment.

Open ended gas hoses must always be protected from dirt and insects.

Before turning on the gas supply at the regulator, ensure that all gas operated equipment in the motorhome is turned off.

All gas equipment is supplied through a Gas Manifold System which has individual isolation taps for each appliance (Fig A), as follows:



Fig. A

RED	Water Heater / Combination boiler
BLUE	Fridge
GREEN	Oven

Note: If the motorhome is in storage or not being used for a period of time, we recommend turning off the gas supply at the gas bottles.

Flue installations

All flue installations should be inspected once a year throughout their length for corrosion. Flues should be replaced if any sign of perforation is found. Ensure that the replacement is of an approved type.

Thermal insulation heating

Your motorhome has been designed to achieve a thermal insulation and heating level for specific climatic conditions when tested according to the procedure in EN1646-1. All Swift Group motorhomes achieve a grade 3 classification

The classifications are as follows:

Grade 1

A motorhome with an average thermal transmittance (u) that does not exceed 1.7w/(m²k).

Grade 2

A motorhome with an average thermal transmittance (u) that does not exceed 1.7w/(m²k) and which can achieve an average temperature difference of at least 20°C between inside and outside temperatures when the outside temperature is 0°

Grade 3

A motorhome with an average thermal transmittance (u) that does not exceed 1.2w/(m²k) and which can achieve an average temperature difference of at least 35°C between inside and outside temperatures when the outside temperature is -15°C.

Gas

Fault	Cause	Remedy
Hob does not light	No gas Air in pipe	Check level of gas in cylinder Check gas cylinder valve is on Check gas taps are on Purge system Refer to hob manufacturers instructions
Oven does not light	No gas Air in pipe	Check level of gas in cylinder Check gas cylinder valve is on Check gas taps are on Purge system Refer to oven manufacturers instructions
Combination heater	No gas Over gassed Air in pipe	Check level of gas in cylinder Check gas cylinder valve is on Check gas taps are on Check exhaust outlet is clear Turn off appliance, wait 2 minutes and try again Purge system Refer to space heater or boiler manufacturers instructions
Fridge does not light	No gas Air in pipe	Check level of gas in cylinder Check gas cylinder valve is on Check gas taps are on Purge system Refer to fridge manufacturers instructions

THE ELECTRICAL SYSTEM

The electrical system

General Information

It is strongly advised that the mains installation is inspected periodically to ensure safe use. The IET (BS7671) wiring regulations recommend that mains installations in motorhomes are re-inspected every 3 years or annually if the van is used frequently. The National Caravan Council lists the qualifications necessary to perform this inspection, but an NICEIC approved contractor is probably the first choice.

On arrival at the campsite

- Check the suitability of the supply, is it AC or DC, is the voltage and frequency correct.
- Ensure that there is a proper earth (3 pin socket outlet).
- If in doubt consult site staff.
- Make sure that the supply from the site is switched off.
- Make sure that the charger switch on the PSU is switched off.
- Lift the cover on the electricity inlet on the motorhome, and insert the connector on the flexible supply cable.
- At the site supply point, connect the other end of the supply cable to this using the socket provided.
- Switch on the main switch at the site supply point.

Note: It is good practice to test the RCD (Residual Current Device) in the PSU before switching on. There is a test button on the RCD to test the lever, put the lever in the up position (on) before testing.

Note: As with the RCD it is good practice to check the Miniture Circuit Breaker (MCB) in the PSU. Switch all to the on position (lever up). If any do not stay up then there is a fault.

On departure from the campsite

- Switch off supply from the site, disconnect the cable at both ends.
- Switch off RCD.

Note: Never use a mains supply lead whilst coiled. Always uncoil the full length before connecting to the supply and remember to protect the cable from traffic.

⚠ WARNING: Current consumption in the motorhome must not exceed 16 amps or the pitch permitted maximum if this is less than 16 amps.

Overseas connection

- Connection to a mains voltage overseas requires particular attention.
- Overseas supplies can be of reverse polarity.
- Reverse polarity results in equipment not necessarily being isolated when turned off, reverse polarity indicator on the PSU will light in the event of reverse polarity.
- The only sure way to make equipment safe is to unplug it.
- It is useful to have a means of checking polarity when overseas.
- If it can be achieved then connect live to live, and neutral to neutral to achieve full electrical protection.

⚠ WARNING: Never allow modifications of electrical or LPG systems and appliances except by qualified persons.

230V MAINS CONSUMPTION

230V mains electrical equipment power consumption**Please note:**

It is possible that the 230V mains electrical equipment may not all operate simultaneously. A typical UK motorhome site mains hook up point provides a maximum output of 10 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.

Similarly loadings on each circuit breaker within the vehicle should be observed.

A label positioned close to the MCB's will identify which appliances within the vehicle are fed from which MCB. Consulting the table (Typical Appliance Consumption Figures) in conjunction with this label, will give an indication of which appliances can, and cannot, (site supply allowing), be operated simultaneously.

Typical appliance consumption figures

Appliances	230V		12V		LP GAS Grams/hour
	Watts	Amperes	Watts	Amperes	
Domestic refrigerator	190w	0.8amp	Only when driving		16g/h
Truma Combi 4kW Heating system	900 / 1800W	3.9 / 7.8amp	13W	1.1amp (avg)	320g/h
Microwave (Factory fit)	1270W	5.5amp	Not applicable	Not applicable	Not applicable
Smev Hotplate	Not applicable	Not applicable	Not applicable	Not applicable	196 - 320g/h
Smev Grill	Not applicable	Not applicable	Not applicable	Not applicable	95g/h
Theftford Hotplate	Not applicable	Not applicable	Not applicable	Not applicable	112 - 180g/h
Theftford Grill	Not applicable	Not applicable	Not applicable	Not applicable	112g/h
Theftford Oven	Not applicable	Not applicable	Not applicable	Not applicable	115g/h
Battery Charger	690w	3amp	Not applicable	Not applicable	Not applicable
Water Pump	Not applicable	Not applicable	48w	4amp	Not applicable

Note: These are approximate figures for guidance only, and are subject to changes in specification. The figures show energy consumption when an item or appliance is operating – i.e. a light is illuminated, or a heating system is providing space heating or water heating. Appliances which feature LCD or illuminated control panels can have a low current consumption when in stand by mode, or have a constant low current draw in the background to run their displays and electronic systems - these figures are typically 0.4 amps or less, for each applicable item. These electronic items can in most cases be switched off individually, or, use of the System Shutdown button on the power supply unit isolates all of these items.

TYPICAL CONSUMPTION

Motorhome battery	66
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Water pump operation.....	80
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Generator usage.....	80
Habitation relay.....	80
Electrics fault finding.....	81
Cab radio	84
Radio aerial	85

MOTORHOME BATTERY

Motorhome battery

Your motorhome has been fitted with a sealed, Absorbed Glass Matt leisure battery which is specially designed for installing on its side or without ventilation. The battery or batteries should only be positioned in the appropriate compartment, and be properly secured before travelling.

It is recommended that a good quality leisure battery is always connected when the motorhome electrical system is in use.

Leisure batteries are a deep cycling rechargeable heavy duty 12v battery designed to provide power for lights and other electrical appliances. Replacement batteries should be a proprietary brand leisure battery with a 85amp - 110 amp capacity.

⚠ WARNING: When renewing a leisure battery care should be taken ensuring that a fully sealed Absorbed Glass Matt battery, which can be fitted on its side is used. IF UNSURE SEEK ADVICE
Other types of leisure batteries contain a liquid and electrolyte which will leak out if laid on its side. CONTACT WITH THE LIQUID ACID CAN CAUSE SEVERE INJURIES AND DAMAGE TO THE VEHICLE.

Note: Replacement batteries should be checked dimensionally before purchasing, to ensure fitment within the battery compartment, as brands vary in size.

It should be remembered that batteries suitable for the electrical demands of a motorhome differ in design from those for use with a car, and whilst the system may operate with a car battery it is strongly recommended that only a rechargeable leisure type battery, maintained in good condition is used.

⚠ WARNING: When connecting the battery, ensure that the correct polarity is observed (black is negative and red/brown is positive) and that the terminals are securely fastened.

Under normal circumstances it should not be necessary to remove the battery other than for routine inspection of terminals.

Your motorhome has been fitted with an in-line 40 amp fuse between the battery terminal and the power supply unit. Do not use a higher rated fuse as this may cause damage to your motorhome.

⚠ WARNING: Switch off all appliances and lamps before connecting or disconnecting the battery. Smoking is prohibited around the battery compartment.

To preserve the life of your leisure battery and charger please observe the following:

1. Do not leave all 12v lights powered at the same time as this will drain your leisure battery more rapidly.
2. If all 12v lights must be powered together, ensure the battery is 'in-circuit' and that the battery charger is turned on.
3. For optimum performance use the transformer/charger unit with a leisure battery attached.

Please note the auxiliary battery or batteries supplied with your motorhome may not be fully charged and should be charged for a minimum of 24 hours before use.

Battery performance may be affected by a number of things such as ambient temperature, age, state of charge etc.

Note: Please also see notes on selecting leisure batteries (see page 71)

EC400 Power control system

1. Introduction

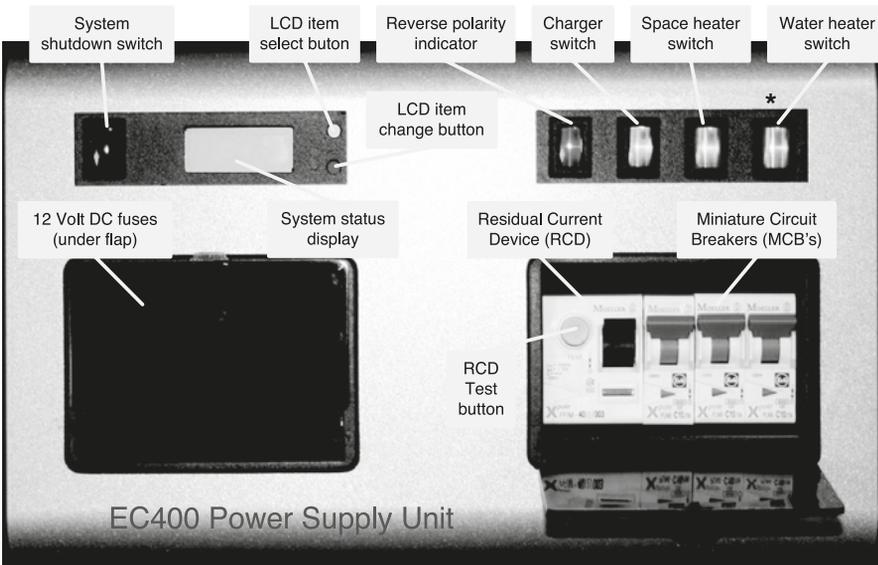
This section of the handbook will guide you through the operation of the electrical system.

Further technical details are contained in section 3 or in the supporting technical manual available from www.sargentltd.co.uk

For the safe operation of all electrical equipment within your Leisure Vehicle it is important that you read and fully understand these instructions. If you are unsure of any point please contact your dealer / distributor for advice before use.

The system has a number of key components that you will need to be familiar with before attempting to use the system, these are:

- The Power Supply Unit (PSU) - a combined mains consumer unit and 12V controller located in the bed box.
- The Control Panel (CP) - a remotely located user control panel used to turn circuits on and off and to display battery and water tank information. This panel uses simple straightforward controls and reliable data communication to the PSU.



* On conversions that use a combination space / water heater appliance the water heater button is not used, and the button may instead be marked 'Heating System'.

EC400 POWER CONTROL SYSTEM

2. Using the System**2.1 Power Supply Unit - Component Layout**

The PSU is located in the bed box area.

2.2 Activating the System

The EC400 system has a shutdown feature that can be used when the vehicle is in storage. This allows the leisure electronics to be turned off when not required to save battery power. When in the off state the alarm and tracking system supplies are still active, all other supplies are turned off.

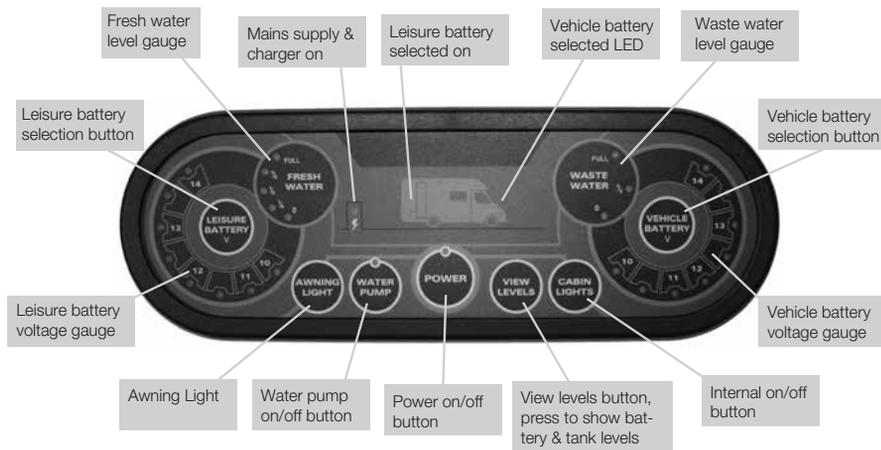
Before using the system please ensure the system 'Shutdown switch is in the on position (button in).

2.3 Connecting to the Mains 230V supply and Safety checks

For your safety it is IMPORTANT that you follow these connections instructions each time your Leisure Vehicle is connected to a mains supply. This section assumes that the system is complete and that a Leisure battery has been installed (see 3.4).

- a. Ensure suitability of the Mains Supply. Your Leisure Vehicle should only be connected to an approved supply that meets the requirements of BS7671 or relevant harmonised standards. In most cases the site warden will hold information regarding suitability of supply. If using a generator you also need to comply with the requirements / instructions supplied with the generator. Please note that some electronic generators may not be compatible with your leisure system. Further generator operational information is contained elsewhere in this manual.
- b. Switch the PSU Power Converter OFF. Locate the green 'Charger' power switch on the PSU and ensure the switch is in the off position (button out) before connection to the mains supply.
- c. Connect the Hook-up Lead. Firstly connect the supplied hook-up lead (orange cable with blue connectors) to the Leisure Vehicle and then connect to the mains supply.
- d. Check Residual Current Device operation. Locate the RCD within the PSU and ensure the RCD is switched on (lever in up position). Press the 'Test' button and confirm that the RCD turns off (lever in down position). Switch the RCD back to the on position (lever in up position). If the test button failed to operate the RCD see section 3.10.
- e. Check Miniature Circuit Breakers. Locate the MCB's within the PSU (adjacent to the RCD) and ensure they are all in the on (up) position. If any MCB's fail to 'latch' in the on position see section 3.10.
- f. Turn the PSU ON. Locate the black 'Shutdown' button and ensure it is in the on position (press button in). Locate the green 'Charger' switch on the PSU and turn to the on position (press button in). The charger switch will illuminate when turned on.
- g. Check correct Polarity. Locate the 'Reverse polarity' indicator on the PSU and ensure that the indicator is NOT illuminated. If the indicator is illuminated see section 3.10.
- h. Check operation of equipment. It is now safe to operate the 12v and 230v equipment.

EC400 Power Control System - EC462



2.4 Control Panel - Component Layout

2.5 Control Panel Operation

- Power Button.** Press the power button to turn the leisure power on. Press the button again to turn the power off. The adjacent LED will illuminate when the power is on, and also the voltage of the selected battery will be displayed on the voltage gauge.
- Pump Button.** With the power on, press the pump button to turn the water pump on. Press the button again to turn the pump off. The adjacent LED will illuminate when the pump is on, and also the level of the water tank will be displayed on the water gauge.
- View Levels.** To display the battery voltage levels and the water tank levels on the control panel gauges, press the levels button. The display will remain illuminated for 10 seconds.
- Battery Select.** By default, the leisure battery is selected as the power source if no mains supply is present, or as the battery to be charged when the mains supply is available. To change the selected battery, press the battery select button. The selected battery is indicated by an LED situated in the centre of the leisure and vehicle battery gauges.

- Lights Button.** With the power on, press the lights button to turn the main lighting supply on or off.

- Awning Light Button.** With the power on, press the awning light button to turn the awning light on or off.

2.6 Operation while driving

The EC400 system is designed to shutdown parts of the system while the engine is running. This is to meet Electro Magnetic Compatibility (EMC) regulations and to ensure the safe operation of the motorhome.

Please ensure the system shutdown switch on the PSU is in the on (button in) position before driving (see 2.2). This will ensure the electronic system is active and will therefore be able to control the charging process, supply the refrigerator and monitor other system circuits.

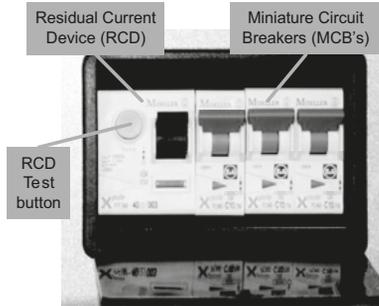
If / when fitted, designated 12v sockets, en-route reading lights and en-route heating will remain operational while the engine is running.

EC400 POWER CONTROL SYSTEM

3. System Technical Information

The following section provides further technical information relating to the electrical system. You can also access the supporting technical manual from www.sargentltd.co.uk

3.1 Residual Current Device & Miniature Circuit Breakers



The Residual Current Device (RCD) is basically provided to protect the user from lethal electric shock. The RCD will turn off (trip) if the current flowing in the live conductor does not fully return down the neutral conductor, i.e. some current is passing through a person down to earth or through a faulty appliance.

To ensure the RCD is working correctly, the test button should be operated each time the vehicle is connected to the mains supply (see section 2.3)

The Miniature Circuit Breakers (MCB's) operate in a similar way to traditional fuses and are provided to protect the wiring installation from overload or short circuit. If an overload occurs the MCB will switch off the supply. If this occurs you should investigate the cause of the fault before switching the MCB back on.

The following table shows the rating and circuit allocation for the three MCB's. MCB's fail to 'latch' in the on position see section 3.10.

MCB	Rating	Output Wire Colour	Description
1	10 Amps	White	230v Sockets
2	10 Amps	White (Yellow for heater)	Extra 230v Sockets / Space Heater
3	10 Amps	Black (Blue for water heater)	Fridge / Water Heater / 12v Charger

3.2 Battery Charger

The PSU incorporates an intelligent three-stage battery charger / power converter.

During stage 1 the battery voltage is increased gradually while the current is limited to start the charging process and protect the battery. At stage 2 the voltage rises to 14.4V to deliver the bulk charge to the battery. When the battery is charged, the voltage is decreased at stage 3 to 13.6V to deliver a float charge to maintain the battery in the fully charged state. The charger can be left switched on continuously as required.

The battery charger / power converter also provides power to the leisure equipment when the mains supply is connected. This module supplies DC to the leisure equipment up to a maximum of 25 Amps (300 Watts), therefore the available power is distributed between the leisure load and the battery, with the leisure load taking priority as per the following example:

Leisure load	Available power for battery charging
5A	20A
10A	15A
15A	10A
20A	5A

⚠ WARNING: Under heavy loads the PSU case may become hot. ALWAYS ensure the ventilation slots have a clear flow of air. Do not place combustible materials against / adjacent to the PSU.

3.3 Smart Charging

The system incorporates a smart charge feature, which monitors both leisure and vehicle batteries and automatically adjusts and directs the charger power (and solar power if a solar panel is installed) to maintain the leisure and vehicle batteries at an optimal level.

3.4 Leisure Battery

a. Type / Selection

For optimum performance and safety it is essential that only a proprietary brand LEISURE battery is used with a typical capacity of 85 to 110 Ah (Ampere / hours). A normal car battery is NOT suitable. This battery should always be connected when the system is in use.

The PSU is configured to work with standard lead acid leisure batteries, and in most cases is also compatible with the latest range of Absorbed Glass Matt (AGM) batteries. Before fitting non-standard batteries please check that the charging profile described in 3.2 is suitable for the type of battery by referring to the battery documentation or battery manufacturer.

Some vehicle installations can cater for two leisure batteries connected in parallel. In these cases it is recommended that two identical batteries are used.

The battery feed is fitted with an inline fuse between the battery and the electrical harness, and is usually located immediately outside the battery compartment or within 500mm of the battery. The maximum rating of this fuse is 40A per battery.

EC400 POWER CONTROL SYSTEM

b. Installation & Removal

Always disconnect the 230v mains supply and turn the PSU green charger switch to the off position (button out) before removing or installing the battery.

When connecting the battery, ensure that the correct polarity is observed (black is negative [-] and red is positive [+]) and that the terminals are securely fastened. Crocodile clips must not be used.

⚠ WARNING: Explosive gases may be present at the battery. Take care to prevent flames and sparks in the vicinity of the battery and do not smoke.

These warnings will not be repeated unless the power switch is turned off and on again. This is to ensure the warning does not become a nuisance.

c. Operation / Servicing

Under normal circumstances it should not be necessary to remove the battery other than for routine inspection of the terminals and "topping up" of the battery fluid where applicable. Please see instructions supplied with the battery.

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 10v. Discharging a battery below this figure can cause permanent damage to one or more of the cells within the battery.

To prevent over discharge, the EC400 system incorporates a battery protect circuit that warns the users and then disconnects the batteries when they fall below set values.

If the power is turned on and the leisure battery level falls below 9V a warning beep will be heard and the leisure battery gauge 10V LED will flash. To cancel the warning, press the levels button.

If the power is turned on and the vehicle battery level falls below 10.9V a warning beep will be heard and the vehicle battery gauge 10V LED will flash. To cancel the warning, press the levels button.

Battery	Voltage cut off	Action after cut off	Notes
Vehicle	10.9v	Battery selection is changed from Vehicle battery to Leisure battery. If the leisure battery is below 9v then a further warning will occur (see below).	This cut off level is designed to protect the vehicle battery from over discharge. The 10.9v level ensures there is sufficient power in the battery to run the vehicle electronics and start the vehicle. This cut off only applies to power drawn from the battery by the leisure equipment; it will not protect the battery if you leave vehicle circuits switched on, such as the road lights.
Leisure	9v	Power is turned off	<p>This is an emergency cut off level to protect the battery from severe damage. You should not rely on this cut off level during normal operation, but manage your power consumption to a discharge level of 10v.</p> <p>This cut off only applies to power drawn from the battery by the leisure equipment that is controlled by the control panel power switch; it will not protect the battery from discharge by permanently connected equipment.</p>

EC400 POWER CONTROL SYSTEM

3.5 12 Volt DC Fuses

⚠ WARNING: When replacing fuses always replace a fuse with the correct value. NEVER replace with a higher value / rating as this could damage the wiring harness. If a replacement fuse 'blows' do not keep replacing the fuse as you could damage the wiring harness. Please investigate the fault and contact your dealer.

The following table shows the fuse allocation for the 15 fuses fitted to the PSU. Please note that fuses are dependant on PSU versions, so not all fuses may be present.

Fuse	Rating	Fuse Colour	Description
1	20 Amps	Yellow	Motorhome Fridge 12V
2	15 Amps	Blue	Not used
3	7.5 Amps	Brown	not used
4	15 Amps	Blue	Motorhome Fridge 12V D+
5	10 Amps	Red	Extractor Fans / Heating Systems
6	10 Amps	Red	12V Sockets, TV aerial amplifier, bathroom lights
7	10 Amps	Red	Front Internal Lights
8	10 Amps	Red	Water Pumps / toilet
9	15 Amps	Blue	Electric Step
10	10 Amps	Red	Not used
11	10 Amps	Red	Awning light / map lights (if fitted) / en route heating / compressor fridge
12	5 Amps	Tan	Control system / fridge electronics
13	5 Amps	Tan	Oven ignition
14	10 Amps	Red	Rear Internal Lights
15	25 Amps	Clear	Charger (fuse fitted internally to PSU)

3.6 Solar Charge Management

The PSU incorporates a built-in solar charge management feature, which will control the input from a separate solar panel and regulator. Depending on the charge state of the batteries, the solar power will be directed to the required battery, and continuously monitored to ensure optimum operation.

3.7 System Status and Configuration display

The E400 PSU also contain a status display unit that can be used to view system information. Press the top yellow 'select' button to change the item being viewed.

Warnings and Alerts

If the vehicle engine is started whilst the motorhome is connected to the 230v supply, a warning beep will be heard. This is to warn you to remove the 230v supply before driving away.

When the vehicle engine is running both the vehicle battery and the leisure battery LED's will flash in unison to indicate that they are connected together and are being charged by the vehicle.

Step operation, if the engine is started with the step in the out position, the step will move in automatically, after a short warning buzzer. If this operation fails due to an obstacle a buzzer will sound continuously to warn that the step is still out, and therefore requires your attention.

Low water level and waste tank, if the fresh water level drops to below 25% a warning beep will be heard and the fresh gauge empty LED will flash. To cancel the warning, press the levels button. If the waste water level rises to full (100%) a warning beep will be heard and the waste gauge full LED will flash. To cancel the warning, press the levels button.

Low voltage warning and cut off, if the power is turned on and the leisure battery level falls below 9V a warning beep will be heard and the leisure battery gauge 10V LED will flash. To cancel the warning, press the levels button. If the power is turned on and the vehicle battery is selected (being used) and the level falls below 10.9V a warning beep will be heard and the vehicle battery gauge 10V LED will flash. To cancel the warning, press the levels button.

FAULT FINDING

3.10 Common Fault Table

Fault	Possible Cause	Proposed Fix
No 230 volt output from PSU	Connecting lead between the site and Leisure Vehicle not connected	Check and connect lead as per 2.3C
	RCD switched off	Reset RCD as per 2.3D
	RCD not operating correctly	Check supply polarity; if the RCD continues to fail contact your Dealer as there is probably an equipment or wiring fault.
	MCB switched off	Reset MCB by switching OFF (down position) then back ON (up position), if the MCB continues to fail contact your Dealer as there is probably an equipment or wiring fault.
	No or deficient supply from site	Contact site Warden for assistance
	Other fault	Contact your Dealer
Reverse Polarity light is illuminated on PSU	Mains Supply reversed?	The reverse polarity light is designed to illuminate when the Live and Neutral supply has been reversed / crossed over. If the light illuminates there is a problem with the site supply or the cable connecting the supply to your vehicle. The light is designed to work on UK electrical supplies (where the neutral conductor is connected to earth at the sub station). If you are using your vehicle outside the UK this light may illuminate when no fault exists. In these cases consult the site warden for advise.
	Generator being used	‘The Reverse Polarity warning light is on when using my Generator’. This is a normal side effect when using some types of generator. Instead of connecting the neutral conductor to earth, some generators centre tap the earth connection making both neutral and live conductors 110v above earth. This 110v difference causes the neon polarity indicator to illuminate. In most cases it is still safe to use the generator, but please consult the generator handbook for further information.

Fault	Possible Cause	Proposed Fix
Control Panel Problems	Control Panel has no display	Check batteries and fuses, turn PSU isolate switch and charger switch on and ensure mains supply is connected. Check control panel connecting lead at PSU and behind Control Panel Contact your Dealer
	12v Power turns off	Battery protect feature has operated to protect the Vehicle battery and or the Leisure battery. See 3.4C Engine has been started, all equipment has been disconnected to meet EMC requirements. See 2.6
	Control Panel locked / erratic function	Observe control panel handling instructions Control panel software may have crashed. Reboot control panel by turning off the PSU shutdown switch. Wait 30 seconds then turn the switch back on.
No 12 volt output from PSU	No 230v supply	Check all above
	Charger not switched on	Turn charger switch on, switch will illuminate
	Battery not connected and / or charged	Install charged battery as per 3.4
	Power button on control panel not switched to on	Turn power on at control panel
	Battery flat / Battery fuse blown	Recharge battery, check fuses, check charging voltage is present at battery
	Fuse blown	Check all fuses are intact and the correct value fuse is installed as per fuse table
	Equipment switched off / unplugged	Check equipment is switched on and connected to the 12v supply
	PSU overheated / auto shutdown operated	Reduce load on system. Allow PSU to cool down. PSU will automatically restart when cool.
	Other fault	Contact your Dealer
Pump not working	Fuse blown	Replace fuse with correct value as per fuse table.
	Pump turned off	Turn pump on by pressing the pump button at the control panel.
	Setting incorrect	Both the internal and external pump feeds are controlled from the control panel. To alter the setting of the pump switch see section 3.8 Ensure the setting matches your desired requirement.

Sargent Electrical Services Limited provide a technical help line during office hours. Please contact 01482 678981 if you require technical help.

For out of hour support please refer to the tech support section of the Sargent web site www.sargentltd.co.uk

ELECTRICAL DATA

4. Technical Data & Approvals

4.2 Motorhome Equipment - EC400 Series PSU / Control Panel

Outline Specification		
INPUT 230v	230 Volts / 0 to 16 Amps	+ / - 10%
OUTPUT 230v	RCD protected, 3 x MCB outputs of 10A Separate switched channels for water heater, space heater and charger EC470 2 x 10A MCB Outputs & 1 x 16A MCB Output (Alde systems only)	
INPUT 12v	2 x 20A battery inputs via 2 x 4 way connectors	
SOLAR INPUT	1 x Dedicated solar panel input (20 to 100W panel) via a 2 way connector	
OUTPUT 12v	25A total output via multiple switched channels protected by 14 fused outputs	
CHARGER	Input 220-240 Volts AC +/- 10%, Frequency 50 Hz +/- 6%, Current 3A max. DC Output 13.6 to 14.4 Volts nominal, Current 25 Amps max (300 Watts). Overall size (HxWxD) 50 x 250 x 135mm	Fixing centres 128*128mm 1.2kg
Signal INPUT	4 x Fresh water level, 4 x Waste water level, 1 x Engine running, plus multiple vehicle connections	Fresh water negative sensed Waste water negative sensed
Data IN / OUT	CANBUS Data communication and power to Control Panel via 6 way connector	
IP rating	IP31	
Operating temperature	Ambient 0 to 35°C PSU case temperature with full load 65°C Max	Automatic shutdown and restart if overheated / overloaded

Dimensions		
EC468, EC469 PSU	Overall size (HxWxD) 315 x 195 x 150mm Clearances 75mm above, 50mm left & right	Weight 2.9 Kg
EC462, EC467 Control Panel	Overall size (HxWxD) 87 x 250 x 15mm Cut-out size (HxW) 70 x 233mm	Fixing centres 130*75mm Weight 114 g

4.3 Approvals

System: BSEN 1648-1, BSEN1648-2
compliant, BS7671: 2008 compliant

Residual Current Device: RCD 40A 30mA trip
to BS EN 61008

Miniature Circuit Breakers: MCB's type C
6000A breaking capacity to BSEN 60898

Electro Magnetic Compatibility (EMC) directive
2004/108/EC Certificate CE20071224-1

Integrated Charger: BS EN 60335-1/2.29,
2006/95EC, IEC61000-3.2/3:1995, 1.

Low Voltage Directive: 2006/95EC TUV-
014900-A1, EN55022, Class B, EN55024/
Level 2

12V Operation of Electrical Items

Most appliances within your product are designed to function when supplied with a 12V feed, either from a leisure battery or the on-board charger.

However, customers should note that some items may have limited functionality when the battery is in a lower voltage state (i.e. circa 10V). The Swift Group makes every effort when specifying components to operate at low voltages, but is not responsible if a component fails to work at lower voltages.

Components that are typically affected by low battery voltage include, but are not limited to, the pump, the radio and some lights which require higher voltages for start-up.

WATER PUMP OPERATION

Water Pump Operation

The control panel pump button operates the internal water pump drawing water from the onboard tank.

The water tanks (fresh & waste) incorporate a level warning feature to warn the user when the fresh water level drops below 25% or when the waste water level reaches 100%.

If the water pump power is turned on and the fresh water level drops to below 25% a warning beep will be heard and the fresh gauge empty LED will flash. To cancel the warning, press the levels button.

If the water pump power is turned on and the waste water level rises to full (100%) a warning beep will be heard and the waste gauge full LED will flash. To cancel the warning, press the levels button.

These warnings will not be repeated unless the water pump power switch is turned off and on again. This is to ensure the warning does not become a nuisance.

Electric Step Operation

On vehicles fitted with an electric step, this is operated by a button near the entry door. Press and release the button to move the step in or out. One press of the button will move the step out, a further press will move the step in again.

If the engine is started the step will move in automatically, after a short warning buzzer. If this operation fails due to an obstacle a buzzer will sound continuously to warn that the step is still out, and therefore requires your attention.

Generator Usage

Caution should be used before connecting a generator to your motorhome.

⚠ WARNING: Never start or top the generator while electrical loads are connected and switched on. Start the engine, let it stabilise, then connect the electrical load. To stop engine, disconnect the electrical load and let engine stabilise before switching off.

Whilst some generators use inverter technology, others use a more basic principle to generate the 230v supply. Preference should be to choose a generator which produces a consistent sinusoidal wave from accurate voltage control.

The reverse polarity warning light may illuminate when using a generator. This is a normal side effect when using some types of generator. Instead of connecting the neutral and live conductors 110v above earth. This 110v difference causes the neon polarity indicator to illuminate.

In most causes it is safe to use a generator, but please consult the generator handbook for further information.

Habitation Relay

Habitation relays are fitted to motorhomes by manufacturers to comply with the following legislation:

1. The Road Vehicles (Construction and Use) Regulations 1986 Regulation 60 - Radio interference suppression
2. European Community Whole Vehicle Type Approval (ECWVTA) framework directive 2007/46/EC and EU Regulations 661/2009 (General Safety) mandates UNECE Regulation 10 (Vehicles with regard to Electromagnetic compatibility)

A habitation relay must be fitted by manufacturers, safe guarding the consumer, the purpose of the relay is to disable non-homologated appliances/components whilst the vehicle is in transit.

Unintentional electromagnetic energy can be created by non-homologated devices within the habitation compartment, which could cause a malfunction of the base vehicles electronic systems/components, including safety critical items such as air bags, ABS braking etc.

In your motorhome the habitation relay is within the EC400 / 450 power supply unit.

The Swift Group recommends that electrical fault finding is undertaken by a trained Technician familiar with the systems involved. The basic checks below are therefore limited to items that can be checked without the use of tools etc. If in any doubt please consult a Swift dealer.

Power Supply	
Fault	Remedy
No 230v output from PSU	See Sargent EC400
No 12v output from PSU	See Sargent EC400
Reverse Polarity light illuminated	See Sargent EC400
Control Panel Problems	See Sargent EC400

Appliance Not Operating	
Fault	Remedy
Error code or fault light displayed on appliance (eg fridge LCD display)	Check appliance specific information for next steps
No display at appliance controls	Check power supplies are available (electric hook up, charger operating, battery in good state of charge). Majority of appliances will not be operational when engine is running. Ensure control panel is ON. Check appropriate fusing in Power Supply unit

TROUBLESHOOTING

Internal Lighting	
Fault	Remedy
Lighting not operational	<p>Check power supplies are available</p> <p>Check control panel is ON, and that CABIN LIGHTS button has been pressed</p> <p>Locate furniture mounted switches, where appropriate</p> <p>Check fuses on Power Supply Unit</p> <p>Determine if light is LED or Tungsten / Halogen bulb, or Fluorescent tube – check and replace bulb if appropriate</p>

Road Lighting	
Fault	Remedy
Dashboard warning light illuminated / groups of road lights inoperative	<p>Check all bulbs are located correctly in bulb holders (especially those recently replaced). See bulb replacement information in Service Book</p> <p>If Tow Bar fitted check trailer lighting / disconnect trailer to determine if this is the cause of the fault.</p> <p>Check fuses in Fiat dash for main road lighting (see Fiat handbook for details of which light groups are fused)</p>

Electric Step Operation (When fitted)	
Fault	Remedy
Step will not automatically retract with engine start	<p>Check fuses in Power Supply Unit.</p> <p>Check mechanical condition of step – clean / lubricate if appropriate.</p> <p>Check other functions that are linked to the running of the vehicle engine (i.e. fridge 12v operation). If these are also inoperative contact dealer.</p>
Step does not respond to furniture switch	<p>Check fuses in power supply unit</p> <p>Check mechanical condition of step – clean / lubricate if appropriate.</p> <p>It is possible to link the operation of the step to the lock/unlock commands from the central locking keyfob. If this feature is enabled on your motorhome, check if operation of the step via the central locking keyfob is possible. To enable / disable the keyfob feature contact your dealer.</p>

Power Supply	
Fault	Remedy
Fresh water level sensor gives incorrect readings	Remove cap on underside of the tank to clean sensors. If problems persist, dealer assistance required for further fault finding.
Waste water level sensor gives incorrect reading	If possible, from below motorhome remove level sensor from waste tank, and clean probes. Alternatively, clean waste tank internal surfaces by flushing through with water or cleaning agent. If problems persist, dealer assistance required for further fault finding.

Battery Discharge	
Fault	Remedy
Leisure battery discharging earlier than anticipated	If appropriate to battery, check condition and top-up battery fluid if required Have condition of leisure battery checked by dealer or tyre/exhaust/battery specialist If motorhome is not in use, ensure 'SYSTEM SHUTDOWN' button on Power Supply Unit is being used to isolate all circuits If motorhome is in use, see consumption table in handbook – are several items operating simultaneously / is total load likely to cause discharge. Check charger is operational when mains hook up is present, and that the charger is allowed sufficient time to replenish battery / batteries.
Vehicle battery discharging earlier than anticipated	Have condition of leisure battery checked by dealer or tyre/exhaust/battery specialist If motorhome is not in use, see base vehicle handbook section headed 'periods of inactivity'. Consider use of vehicle battery isolator If motorhome is in use, Power Supply Unit configured to charge / maintain both leisure and vehicle batteries. (Contact dealer for further assistance if unsure)

CAB RADIO TIMER SETTINGS

Audiovisual Equipment	
Fault	Remedy
Radio switches off intermittently	Radio will not remain on indefinitely when vehicle ignition is switched off. Please see below or the Fiat handbook.

Cab Radio - Timer Settings

On all vehicles fitted with a Fiat radio, the amount of time the radio will stay on can be altered. To do this please follow the instructions below:

Procedure for setting radio switching off time after ignition-off.

1. Switch on the radio
2. Press MENU to access the menu.
3. Select SYSTEM SETTINGS and press OK.
4. Scroll to POWER OFF and tick the POWER OFF with 180min. Delay.
5. Press OK
6. Press MENU on the display.

With 180 showing on the display, the setting is complete and the radio will remain on for 3 hours.



Radio VP1



Radio VP2

Motorhome Radio Aerials

Your Motorhome is fitted with a base vehicle aerial located on the roof. Any issues with radio reception should be referred back to your Fiat dealer.

Note: Some customers may wish to fit an aftermarket radio unit to the base vehicle. While this is possible customers should note this may affect steering controls and increase power consumption.

Battery power

As a guideline, a 40w panel is capable of supplying up to 2.3 amps, +/-1.5%, while an 80w panel is capable of supplying up 4.68 amps +/- 1.5%. Depending on the state of the charge of the battery it may take a few hours to several days to recover a discharged battery. For obvious reasons the solar panel will only work during daylight hours.

Regulator operation

There are two LED indicators located on the solar regulator. The first is the 'power' LED and this flashes when the solar panel produces energy, the flash rate increasing with the amount of sun light on the solar panel, until the LED is on solidly. The second LED is bicoloured, and it will indicate the charge condition when sufficient energy is being received by the solar panel. If the second LED is illuminated red, then the regulator is in bulk charge mode supplying 14v plus, if the LED is illuminated green then the regulator is in float charge mode supplying 13.6v.

Maintenance and cleaning

The solar panel will require cleaning periodically in order to maintain the performance of the panel, a caravan, car shampoo or simple soap can be used; no abrasive cleaners should be used.

ELECTRICAL SYSTEMS

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TRUMA COMBINATION BOILER

Note: The instructions covering fitted equipment to your vehicle were correct at the time of going to print. Owners handbooks are updated annually and we take great care to try and ensure their accuracy. However, Swift Group Limited cannot accept responsibility for any changes that may be made in specification or operating instructions to the equipment described in this section after the time of going to press.

Every care is taken to ensure that the information provided in this handbook is correct and easy to understand.

Separate manufacturers' leaflets on many of the components are also included in the Owner's Pack provided with this vehicle and we recommend that you compare the instructions in the handbook with the component manufacturers literature, to ensure the information provided is as accurate as possible.

If you are in any doubt as to how to operate the equipment in your vehicle, please contact the component manufacturer's service department on the telephone number shown on their component leaflet. If you remain in any doubt, please contact customer service department on 01482 875740.

Equipment Specification

For details on type of equipment fitted in your vehicle, please refer to the Sales Brochure or Dealer.

⚠ WARNING: To maximise the use and life of all fitted equipment in your vehicle it is essential that any accompanying manufacturers' literature is read fully. All recommended maintenance and preparation procedures should be followed. The information provided in this handbook is only intended as a guide. If in any doubt consult your manufacturer appointed dealer, particularly before attempting to install EXTRA EQUIPMENT.

Note: In the interest of safety, replacement parts for an appliance shall conform to the appliance manufacturer's specifications and should be fitted by them or their authorised agent.

Truma Combination Boiler

The Truma Combination Boiler has been designed to run on gas or electric power and the optimum performance is obtained when used in **dual fuel mode, that is running on gas and electric at the same time.**

Running in dual fuel mode has the following benefits:

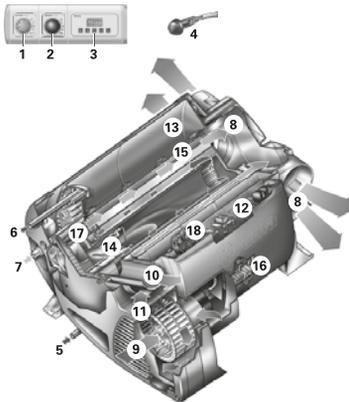
- Fastest possible heat up time, the 2KW gas burner combines with a 1.8KW electric element to provide 3.8KW of energy to heat your hot water and warm your caravan.
- The intelligent heat management system automatically senses when the water and room are nearing the required temperature and then automatically turns off your gas burner and operates solely electric power, conserving your gas.
- As hot water is used or the room cools the Truma combination heater will continue to operate on electric only until a point where the demands necessitate that additional gas power is required. An example for such a demand could be for instance if the exterior door was left open and the room temperature dropped by 10 degrees in the space of a few minutes, in this case the intelligent heat management system would decide that the best way to get the room back to the required temperature would be to use both gas and electric at the same time.

Operating the Truma Combination system on electric or gas only will result in longer heat up times for hot water and the room temperature in comparison to operating on dual fuel.

Operating on electric only may not in all cases maintain a comfortable room temperature especially in colder conditions.

The intelligent heat management system in operation in dual fuel mode allows the Truma Combination boiler to prioritize the electric power source over your gas, which all conserve your gas supply.

Truma Combi 4E



- 1 Control panel
- 2 Power selector switch
- 3 Optional timer
- 4 Room temperature sensor
- 5 Cold water connection
- 6 Hot water connection
- 7 Gas connection
- 8 Hot air outlets
- 9 Recirculated air intake
- 10 Waste gas discharge
- 11 Combustion air infeed
- 12 Electronic control unit
- 13 Water container (10 litres)
- 14 Burner
- 15 Heat exchanger
- 16 Power electronics

17 Heating elements 230 V

18 Overheating switch 230 V

Function description

The liquid gas heater 'Truma Combi' is a warm-air heater with integrated hot water boiler (10 litre volume). The burner operates fan-supported, which ensures trouble-free function even when on the move.

In winter operation the heater can be used to heat the room and simultaneously warm water. If only warm water is required, select summer operation.

- In summer operation, the water contents are heated in the smallest burner stage. Once the water temperature is reached, the burner switches off.
- In winter operation, the unit automatically selects the required power setting according to the temperature difference between the temperature set on the control panel and the current room temperature. When the boiler is filled, the water is automatically heated as well. The water temperature depends on the selected operational mode and the heater output.

At a temperature of approximately 3° C at the automatic FrostControl safety/drain valve, the valve will open and drain the boiler.

The unit is not suitable for use as a flow heater.

Safety instructions

If the gas system is leaking or if there is a smell of gas:

- extinguish all open flames
- open windows and door
- close all quick-acting valves and gas cylinders
- do not smoke
- do not activate any electric switches
- ask an expert to inspect the entire system!

Repairs may only be carried out by an expert!

Any modifications to the unit, including accessories, exhaust duct, and cowl, or the use of spare parts and accessories that are important to the operation of the system that are not original Truma parts and failure

TRUMA COMBI 4E

to follow the installation and operating instructions will cancel the warranty and indemnify Truma from any liability claims. It also becomes illegal to use the appliance, and in some countries this even makes it illegal to use the vehicle.

The gas supply's operating pressure (30 mbar) must be the same as the unit's operating pressure (see type plate).

The vehicle owner is always responsible for arranging the inspection.

Liquid gas equipment may not be used when refueling, in multi-storey car parks, in garages, or on ferries.

During the initial operation of a brand new appliance (or after it has not been used for some time), a slight amount of fumes and smell may be noticed for a short while. It is a good idea to heat the device up several times in summer operation (60° C) and to make sure that the area is well ventilated.

Heat-sensitive objects such as spray cans or flammable liquids may not be stored in the same compartment where the heater is installed because, under certain conditions, this area may be subject to elevated temperatures.

Only pressure regulating equipment that complies with EN 12864 (in vehicles) with fixed output pressure of 30 mbar may be used for the gas system. The flow rate of the pressure control device must correspond to at least the maximum consumption of all devices installed by the system manufacturer.

For vehicles, we recommend Truma's SecuMotion gas pressure regulator; for the two-cylinder gas system we also recommend the Truma DuoComfort changeover valve.

At temperatures below 5° C, the gas pressure regulator or the changeover valve should be used with EisEx regulator heating.

Controller connecting hoses that meet national regulations must always be used in the respective country for which the equipment is destined. These hoses must be checked regularly for brittleness. Winter-proof special hoses must always be used if the equipment is operated during the winter.

Pressure regulating equipment and hoses must be replaced with new ones no more than 10 years after the date of manufacture (every 8 years if used commercially). This is the responsibility of the operator.

Do not use the boiler water as drinking water!

Important operating notes

If the cowl has 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.

The integrity and tight fit of the exhaust gas double duct must be checked regularly, particularly at the end of long trips. Also check the mounting of the appliance and the cowl. Following a blow-back (misfire) always have the exhaust gas system checked by an expert!

Always keep the cowl for the exhaust duct and combustion air intake free of contamination (slush, ice, leaves etc.). The warm air outlets and the openings for circulation air return must be unobstructed so the unit will not overheat. The integrated temperature limiter blocks the gas supply when the unit becomes too hot.

⚠ WARNING: Care should be taken to ensure adequate ventilation of the flue at all times. It is inadvisable to inhale exhaust fumes.

Directive 2004/78/EC stipulates that a safety shut-off device is required if motor homes are being heated while driving.

The Truma SecuMotion gas pressure regulator meets this requirement.

Note: If the Truma SecuMotion gas pressure regulator is not installed, the gas cylinder must be closed while driving and warning signs must be in place in the gas cylinder protection box and near the control panel.

The safety shut-off device is also recommended for safety reasons if motorhomes are being heated while driving.

Standard Operating Instructions

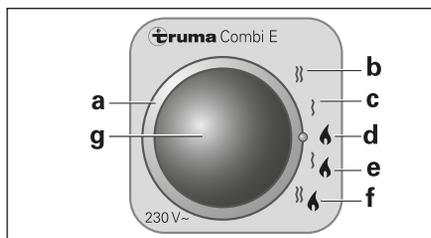
Always observe the operating instructions and 'Important operating notes' prior to starting! The vehicle owner is responsible for the correct operation of the appliance.

The installer or vehicle owner must apply the yellow sticker with the warning information, which is enclosed with the appliance, to a place in the vehicle where it is clearly visible to all users (e.g. on the wardrobe door)! Ask Truma to send you stickers, if necessary.

Before using for the first time, it is essential to flush the entire water supply through with clean warm water. If the heater is not being used, always drain the water contents if there is a risk of frost. There shall be no claims under guarantee for damage caused by frost!

Gas operation (heating and hot water)

Power selector switch



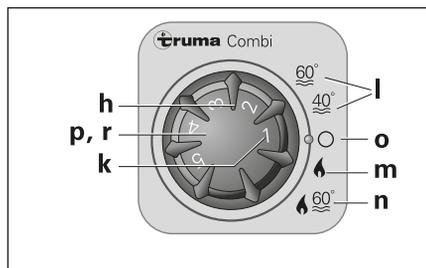
- a = Power selection rotary switch
- b = Electric operation 230 V, 1800 W
- c = Electric operation 230 V, 900 W
- d = Gas operation
- e = Mixed operation* (900 W gas and electrical operation)
- f = Mixed operation* (1800 W gas and electrical operation)
- g = Yellow LED on = "Electrical operation"

* Winter mode only!

In summer mode the unit automatically selects electric operation at the preselected electrical power of 900 W or 1800 W.

Switching on the electric heating elements as well does not increase the maximum heating power.

Control panel



- h = Rotary switch for room temperature (1 – 5)
- k = green LED lit "Operation" green LED blinking "after-running" is active in order to reduce the unit's temperature
- l = Summer operation (water temperature 40 °C or 60 °C)
- m = Winter operation (heating without water temperature monitoring or with drained water system)
- n = Winter operation (heating with water temperature monitoring)
- o = Rotary "Off" switch
- p = yellow LED lit "Boiler heat-up phase"
- r = red LED lit, red LED blinking "Failure"

The LEDs are visible only when the unit is switched on.

Note: The control panel, situated above the entrance door must be switched on for the combi boiler to operate. See page 69

Room thermostat

To measure the room temperature, the room temperature sensor is fitted to the furniture. The exact location is determined by the layout of the vehicle.

The thermostat setting on the control panel (1 – 5) must be determined individually depending on the heating requirement and the type of vehicle. For an average room temperature of about 23 °C, we recommend a thermostat setting of about 4.

TRUMA COMBI 4E

Taking into operation

Heating is possible without restrictions with gas, electrical and mixed operation, with or without water.

Check to make sure the cowl is unobstructed. Be sure to remove any covers that may be present.

For operating on gas turn on gas cylinder and open the shut off valve at the manifold.

For operating on electric operate the water heater switch on the power supply unit. See page 67.

Summer operation (boiler operation only)

Select gas or electrical operation using the power selector switch. Illumination of the yellow LED (g) on the power selector switch indicates that the unit is operating with 230 V.

Mixed operation (gas and electrical) is not possible in summer mode. With this setting the unit automatically selects electrical operation with a preselected power setting of 900 W or 1800 W.

Move the rotary switch on the control panel to position (l – summer operation) 40 °C or 60 °C. The green (k) and yellow (p) LEDs light up.

When the selected water temperature is reached (40 °C or 60 °C) the heater shuts off and the yellow LED (p) goes off.

Winter operation**• Heating with water temperature monitoring**

Select gas, electrical or mixed operation using the power switch. Illumination of the yellow LED (g) on the power selector switch indicates that the unit is operating with 230 V. Move rotary switch on control panel to operating position (n). Set the rotary switch (h) to the desired thermostat setting (1 – 5). The green LED (k) for operation is lit and simultaneously indicates the position of the selected room temperature. The yellow LED (p) indicates the water's heat-up phase.

The device automatically selects the required power setting in accordance with the temperature difference between the temperature selected on the control panel

and the current room temperature. When the room temperature selected on the control panel is reached, the heater switches back to the smallest setting and heats the water to 60 °C. Once the water temperature is reached, the heater switches off and the yellow LED (p) goes out. The warm air fan can continue to run in order to cool the unit (after-run).

• Heating without water temperature monitoring

Select gas, electrical or mixed operation using the power switch. Illumination of the yellow LED (g) on the power selector switch indicates that the unit is operating with 230 V. Move rotary switch on control panel to operating position (m). Turn the rotary switch (h) to the desired thermostat setting (1 – 5). The green LED (k) for operation is lit and simultaneously indicates the position of the selected room temperature. The yellow LED (p – water's heat-up phase) will be lit only when the water temperature is below 5°C! The device automatically selects the required power setting in accordance with the temperature difference between the temperature selected on the control panel and the current room temperature. Once the room temperature selected on the control panel has been reached, the heater switches off. The warm air fan continues to run at slow speed until the outgoing air temperature (on the unit) has fallen to 40°C or less.

If the boiler is filled, the water will automatically be heated at the same time. The water temperature is then dependent on the heating output being given off, and the duration of heating required to reach the desired room temperature.

• Heating with drained water system

Select gas or electrical operation using the power selector switch. Illumination of the yellow LED (g) on the power selector switch indicates that the unit is operating with 230 V. Move rotary switch on control panel to operating position (m). Turn the rotary switch (h) to the desired thermostat setting (1 – 5). The green LED (k) for operation is lit and simultaneously indicates the position of the selected room temperature. The yellow LED (p) will be lit only when the temperature of the unit is below 5°C!

Depending on the operating mode, the unit will automatically select the required power level according to the temperature difference between the setting on the control panel and the current room temperature. Once the room temperature selected on the control panel has been reached, the heater switches off. The warm air fan continues to run at slow speed until the outgoing air temperature (on the unit) has fallen to 40°C or less.

Switching off

Switch off heater at control panel using rotary switch (position o). The green LED (k) goes off.

If the green LED (k) blinks after switching off, then the unit's after-running is active in order to reduce the unit's temperature. This will end after a few minutes and the green LED (k) will go off.

Always drain water contents if there is a risk of frost! If the appliance is not to be used for a prolonged period, close the gas shut off valve at the manifold.

Gas operation fault

If a fault occurs during gas operation the red LED (r) on the control panel illuminates.

Please consult the Trouble-Shooting list for possible causes.

A reset (fault reset) is carried out by switching off, waiting until all LED's on the control panel have stopped flashing, and then switching the heater on again.

Electrical operation fault

If a fault occurs during electrical operation the yellow indicator lamp (g) on the power selector switch goes off.

Possible causes can be found in the troubleshooting list.

If the 230 V power supply is interrupted for just a brief period of approximately 1 second during operation, the heater will subsequently resume as normal.

Filling the water heater

Switch on power for water pump (main or pump switch).

Open hot water taps in kitchen and bathroom, (set preselecting mixing taps or single-lever fittings to "hot"). Leave the fittings open for as long as it takes for the boiler to displace the air and fill up, and the water to flow without interruption.

If just the cold water system is being operated, without using the water heater, the heater tank also fills up with water. To avoid frost damage, the boiler must be drained through the drain valve, even if the boiler was not operated.

When connecting to a central water supply (rural or city mains), a pressure reduction valve must always be installed to prevent pressures above 2.8 bar from developing in the water heater.

Draining the water heater

Switch off power to water pump (main or pump switch).

Open hot water taps in kitchen and bathroom.

In order to check the water that is flowing out, place an appropriate container (capacity 10 litres) beneath the drain valve.

Open the drain valve which is situated next to the boiler by lifting the yellow handle into the vertical position.

Check whether all of the water in the boiler (10 litres) has been drained into the container via the drain valve.

There shall be no claims under guarantee for damage caused by frost!

Maintenance

Only original Truma parts may be used for maintenance and repair work! Materials in the device which come into contact with water are suitable for use with drinking water (see manufacturer's declaration: [www.truma.com / downloads / manufacturer's declaration](http://www.truma.com/downloads/)).

Bio-film, deposits and limescale must be removed using chemicals to protect the unit from infestation by microorganisms.

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Only chloride-free products must be used in order to prevent damage to the unit.

The effectiveness of the use of chemicals to combat microorganisms in the unit can be increased by heating the water in the boiler to 70 °C at regular intervals.

Move power selector switch to gas operation (d) to do this.

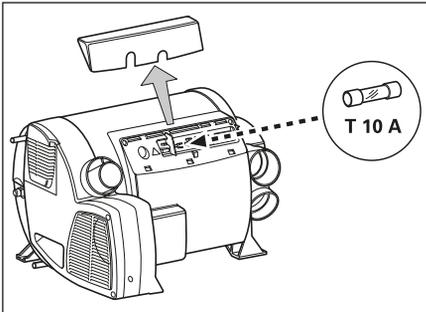
Move the rotary switch on the control panel to position (I – summer operation) 60 °C. The green (k) and yellow (p) LEDs light up. Once the water in the boiler has reached a temperature of 60 °C, the burner will switch off and the yellow LED (p) will go out. The unit must stay switched on for at least 30 minutes and no warm water may be removed. The residual heat in the heat exchanger will heat the water up to 70 °C.

Fuses 12 V

The fuse is in the electronics beneath the connection cover.

Replace the unit's fuse only with an identical fuse.

Device fuse: 10 A – slow – (T 10 A)



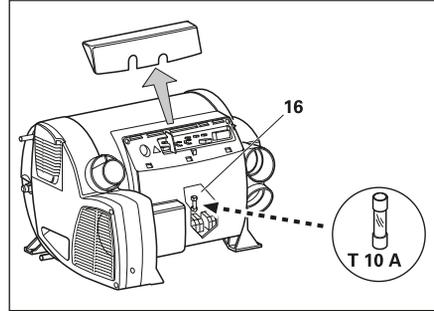
Fuses 230 V

The fuse and the power supply lines must only be replaced by an expert!

The unit must be disconnected from the mains (all poles) before opening the electronic housing lid.

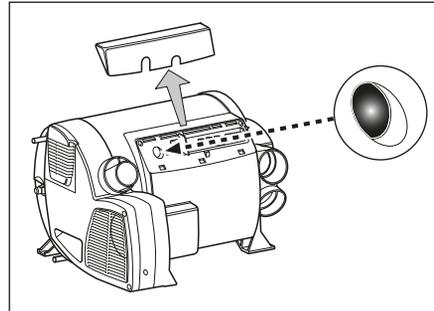
The fuse is in the power electronics (16) beneath the electronic housing lid.

This fine fuse must always be replaced with a fuse of the same type: 10 A, slow, interrupting capacity "H".



Overheating protection 230 V

The 230 V heating facility has a mechanical overheating switch. If the 12 V power supply is interrupted during operation or during the after-run period, for example, the temperatures within the unit could activate the overheating protection.



To reset the overheating protection, allow heater to cool, remove connection cover and press red reset button.

Technical data

Determined in accordance with EN 624 or Truma test conditions

Device category: I_{3 b/p} in accordance with EN 437

Type of gas: Liquid gas (propane/butane)

Operating pressure: 30mbar (see type plate)

Water contents: 10 litres

Heating up time from approx 15°C to approx 60°C

Boiler approx 20 minutes (measured according to EN 15033) Heater + boiler approx 80 min

Pump pressure: max 2.8 bar

System pressure: Max 4.5 bar

Rated thermal output
(automatic output levels)

Gas operation

Combi 4 E: 2000 / 4000 W

Electrical operation

Combi 4 E 900W / 1800 W

Mixed operation (gas and electrical)

Combi 4 E: max 3800 W

Gas consumption

Combi 4: 160-320 g/h

Readiness-heat power requirement
Combi 4 E

Gas operation 5.2g/h

Air delivery volume (gree-blowing without hot air pipe)

Combi 4: with 3 hot air outlets max 249 m³/h
with 4 hot air outlets max 287 m³/h

Current input at 12 V

Heater + boiler

Combi 4 E: Short term max 5.6A
(average power consumption 1.1A)

Heating up of boiler: 0.4 A

Stand by: 0.001 A

Heating element FrostControl (optional):
maximum 0.4 A

Current input of 230V

3.9 A (900 W) or 7.8 A (1800 W)

Weight (not containing water):

Heater unit: 15.1kg

Heater unit with peripheral devices: 15.6kg

Troubleshooting

For troubleshooting a fault please refer to page 9 of the Truma Combi 4E Operator Manual.

Truma Heating System and Air Flow

The Swift Group undertakes considerable testing of our products in cold chambers to ensure they are usable in cold temperatures. During this testing, the air flow on the blown air outlets is defined and set by us. In some cases, customers may wish to alter this setup to achieve a different heating pattern (i.e. more hot air to the rear of the vehicle or vice-versa) and this can be achieved by placing restrictors in the blown air system.

Customers should seek the advice of Truma or their Dealer on how to do this.

DOMETIC ABSORPTION REFRIGERATOR

Dometic absorption refrigerator**Guide to these operating instructions**

Before you start using the refrigerator, please read the operating instructions carefully.

These instructions provide you with the necessary guidance for the proper use of your refrigerator. Observe in particular the safety instructions. Observation of the instructions and handling recommendations is important for dealing with the refrigerator safely and for protecting you from injury and the refrigerator from damage. You must understand what you have read before you carry out a task.

Keep these instructions in a safe place close to the refrigerator so they may be referred to at any time.

Copyright protection

The information, texts and illustrations in these instructions are copyright protected and are subject to industrial property rights.

No part of these instructions may be reproduced, copied or utilised in any other way without written authorisation by Dometic GmbH, Siegen.

Warranty

Warranty arrangements are in accordance with EC Directive 44/1999/CE and the normal conditions applicable for the country concerned.

For warranty or other maintenance, please contact our customer services department.

Any damage due to improper use is not covered by the warranty. The warranty does not cover any modifications to the appliance or the use of non-original Dometic parts. The warranty does not apply if the installation and operating instructions are not adhered to and no liability shall be entertained.

Limitation of liability

All information and guidance in these operating instructions were prepared after taking into consideration the applicable standards and regulations as well as the current state of the art. Dometic reserves the right to make changes at any time which are deemed to be in the interest of improving the product and safety.

Dometic will assume no liability for damage in the case of :

- Non-observation of the operating instructions
- Application not in accordance with the regulations or provisions
- Use of non-original spare parts
- Modifications and interferences to the appliance
- Effect of environmental influences, such as
 - temperature fluctuations
 - humidity

Customer services

Dometic offers a pan-European customer service network. Find your authorised customer service centre by calling the phone number indicated in the EuroService Network book, EuroService Network - which accompanies every refrigerator. You can also obtain the address information of the nearest customer service from www.dometic.com. When contacting Dometic Customer Services, please state the model, product number and serial number together with the MLC code, if applicable. You will find this information on the rating plate inside the refrigerator. We recommend that you note this data in the field provided on the front page of this operation manual.

Spare parts

Parts can be ordered throughout Europe from our customer services. Always give the model and product number when you contact the customer service! You will find this information on the rating plate inside the refrigerator.

Note: Refrigerators manufactured by Dometic GmbH are free of CFC/HCFC and HFC. Ammonia (a natural compound of hydrogen and nitrogen) is used in the cooling unit as a coolant. Non-ozone-hazardous cyclopentane is used as a propellant for manufacturing PU foam insulation.

In order to ensure that the recyclable packaging materials are re-used, they should be sent to the customary local collection system.

The appliance should be transferred to a suitable waste disposal company that will ensure re-use of the recyclable components and proper disposal of the rest. For eco-friendly draining of the coolant from all absorber refrigeration units, a suitable disposal plant should be used.

Energy-saving tips

- At an average ambient temperature of 25°C, it is sufficient to operate the refrigerator at middle thermostat setting.
- Where possible, always store precooled products.
- Do not expose the refrigerator to direct sunlight.
- Ensure that air circulation of the cooling unit is not obstructed.
- Defrosting at regular intervals saves energy (see "Defrosting"). Open the refrigerator door only for a short period of time when removing products.
- Run the refrigerator for about 12 hours before filling it.

Safety instructions

Application according to regulations

This refrigerator is designed for installation in recreation vehicles such as caravans or motorhomes. The appliance has been type approval tested for this application in accordance with the EC Gas Directive.

The refrigerator is to be used solely for storing foodstuffs.

⚠ WARNING: The refrigerator is not suitable for the proper storage of medication. Please observe in addition the instructions in the medication package inserts.

User's responsibility

Anyone operating the refrigerator must be familiar with the safe handling and understand the advice in these operating instructions. Children may only operate the appliance, if they have been made aware of how to operate the refrigerator safely and the dangers attending incorrect operation.

Protection of children when disposing of the equipment

⚠ WARNING: When disposing of the refrigerator, detach all refrigerator doors and leave the storage racks in the refrigerator. In this way inadvertent entrapment and suffocation is prevented.

Working upon and checking the refrigerator

⚠ WARNING: Work on gas equipment, exhaust system and electrical facilities must be carried out by authorised personnel only. Substantial damage to property and / or injury to persons can arise through unprofessional procedures.

⚠ WARNING: Never use an unshielded flame to check gas bearing parts and pipes for leakage!
There is a danger of fire or explosion.

DOMETIC ABSORPTION REFRIGERATOR

⚠ WARNING: Never open the absorber cooling unit! It is under high pressure. There is a danger of injury.

Information on coolant

Ammonia is used as a coolant. This is a natural compound also used in household cleaning agents (1 litre of Salmiak cleaner contains up to 200g of ammonia - about twice as much as is used in the refrigerator). Sodium chromate is used for corrosion protection (1.8% by weight of the solvent).

In the event of leakage (easily identifiable from the strong odour), proceed as follows:

- Switch off the appliance.
- Air the room thoroughly.
- Inform authorised customer services.

Note: For your safety it was ascertained in an expert's report that no impairment of health exists when the coolant is discharged.

Operating the refrigerator with gas

It is imperative that the operating pressure corresponds to the data specified on the rating plate of the appliance. Compare the operating pressure of the rating plate with the data specified on the pressure reducing valve of the liquid gas cylinder.

⚠ WARNING: Operating the appliance with gas is not permitted

- At petrol stations
- On ferry boats
- While transporting the caravan / motorhome by a transporter or breakdown vehicle.

There is danger of fire! Leave the equipment switched off.

Safety instructions when storing foodstuffs

Instructions for storing food in a refrigerator:

No refrigerator of any kind can improve the quality of the food; refrigerators can only maintain the food's quality for a short duration as from the time of storing it.

Please observe the following particular conditions for storing food in a refrigerator that is built into a vehicle:

- A change in the climatic conditions such as temperature fluctuations
- High temperatures inside the vehicle when it is closed and parked in direct sunlight (temperatures are possible up to 50°C)
- Use of the refrigerator during travel with the power supply of 12V DC
- A refrigerator built in behind a window and exposed to direct sunlight
- Storing the products too soon, i.e. shortly after starting up the appliance for use

Under these particular conditions the refrigerator cannot guarantee reaching the temperature needed for perishables.

Perishables include all products with a stipulated use-by date and a minimum storage temperature of +4°C or less, especially for meat, poultry, fish, sausages, pre-packed foods.

- Pack raw and cooked foods separately (e.g. in containers, aluminium foil, etc.).
- Only remove the outside packaging of single packs if all the necessary information, e.g. the use-by date, can also be read on the single packs.
- Do not leave cooled goods outside the refrigerator for too long.
- Place the foods with the next use-by date at the front, accordingly.
- Pack away any left-over food and eat at the first opportunity.

- Wash your hands before and after handling any food.
- Regularly clean the inside of the refrigerator.

Please observe the instructions and information regarding the use-by date on the outside packaging of the food.

Please observe section “Cleaning” of this instruction.

Refrigerator rating plate

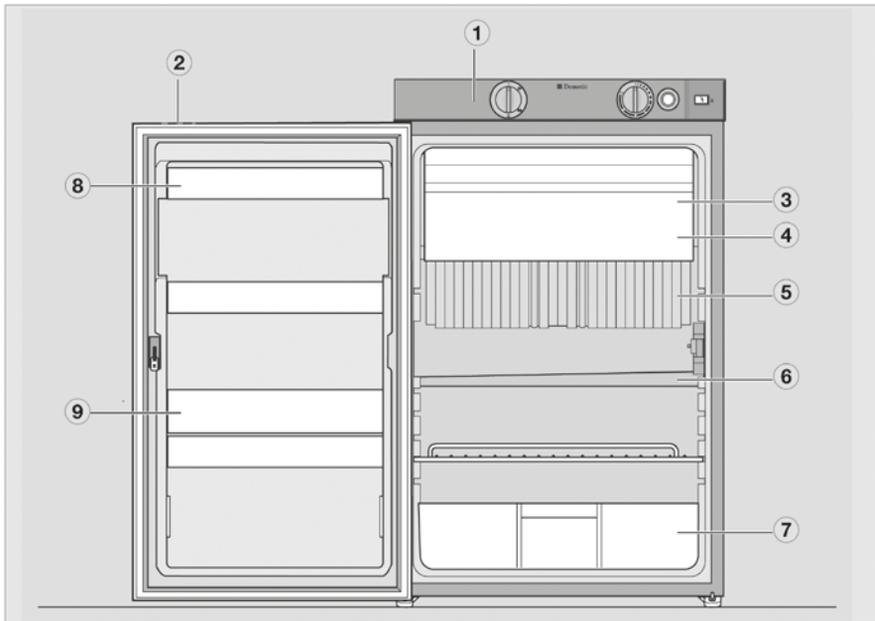
The rating plate is to be found on the inside of the refrigerator. It contains all important details of the refrigerator. You can read off from this the model identification, the product number and the serial number. You will need these details whenever you contact the customer service centre or when ordering spare parts.

D Dometic			
TYPE	C 40110	CLIMATE CLASS	SN
MOD. NO.	RMS 8400 1	PROD. NO.	00921084272 2 C 00
		SER. NO.	99900165 3
BRUTTOINHALT TOTAL CAP. VOLUME BRUT	80 l 85 l	VERDAMPFERFACH FREEZER COMP. VOLUME COMPT BT	8 l 5 l
		NUTZINHALT USEFUL CAP. VOLUME NET	77 l 82 l
~ 230-240V / 125 W 12 V / 120 W	LPG	Q ₁	0,252 kW (HS) 18,3 g/h
4	5	13+ 28-30/07 138/P 28-30	mbar
CE 0093 BL3214	G30, G31	p=30/07	mbar
ABSORPTION	NH 1= 115 g	N ₂ + CO ₂ = 7,0 g	p max = 35 bar
CE 10085 021854	AP	2 650	
FKW, FCKW FREI / CFC, HCFC FREE	MADE IN GERMANY	00057384562	

1. Model Number
2. Product Number
3. Serial Number
4. Electrical rating details
5. Gas pressure

DOMETIC ABSORPTION REFRIGERATOR

Description of refrigerator



1. Operating controls
2. Door locking button
3. Freezer compartment (removable)
4. Insertable grid shelf (available as option, to be used when freezer compartment is removed)
5. Post-evaporator for cooling compartment
6. Condensation water drain channel
7. Vegetable bin
8. Upper door shelf with flap, egg shelf available as option may be inserted
9. Lower door shelf with bottle holders

Refrigerator operation

The refrigerator is equipped to operate on three power modes:

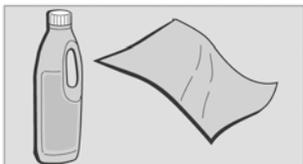
- Mains voltage (230V AC)
- Direct-current voltage (12V DC)
- Gas (liquid gas propane/butane)

Select the desired power mode by the energy selector switch (battery igniter type models) or the MODE button (MES, AES). Appliances with automatic energy selection (AES) are additionally provided with "automatic mode" function. The AES system automatically selects the best energy source for each particular situation.

Cleaning

Before starting up the refrigerator, it is recommended that you clean it inside and repeat this at regular intervals.

Use a soft cloth and lukewarm water with a mild detergent. Then wipe out the appliance with clean water and dry thoroughly.



To avoid material alterations, do not use soap or hard, abrasive or soda-based cleaning agents.

Do not allow the door seal to come into contact with oil or grease.

Maintenance

- In compliance with the applicable regulations, please note that the gas unit and the connected ventilation ducts must be checked by authorised technical personnel after first use and after every other year for compliance with the European Standard EN 1949. A test certificate has to be issued. It is the user's responsibility to arrange this test.

- The gas burner must be inspected and cleaned as necessary at least once a year. When using liquefied petroleum gas (tank or refill cylinders) the maintenance interval is reduced to half-yearly or quarterly. Keep the evidence of maintenance work carried out on your refrigerator.
- Work on gas and electrical equipment shall be carried out by qualified personnel only.

It is recommended that this is carried out by an authorised customer services department.

We recommend maintenance following an extended shutdown of the vehicle.

Note: We recommend maintenance following an extended shutdown of the vehicle. Please contact Dometic Customer Services.

The cooling unit's performance is influenced by ambient temperatures. Please select the medium setting for ambient temperatures between +15°C and +25°C (refer to Setting of cooling compartment temperature). The unit operates within its optimum performance range.

Dometic refrigerators work according to the absorption principle. For physical reasons, an absorption system responds slowly to changes made by the thermostat controller, by loss of cooling energy through opening the door or during storing food. The devices meet the cooling performance requirements of the Climatic Class SN acc. to EN/ISO 7371 in the temperature range of +10°C to +32°C ambient temperature.

For temperatures below +10°C, winter covers should be installed. For ambient temperatures exceeding +32°C for a longer period of time, it is recommended installing Dometic additional fan (item no. 241 2985 -00).

DOMETIC ABSORPTION REFRIGERATOR

Manual energy selection / automatic ignition (RM 8xx1) MES

1. Power ON/OFF switch
2. Energy selector button 230V ~
3. Energy selector button GAS
4. Energy selector button 12V =
6. Temperature level selection
7. Temperature level display
8. Indicator LED failure / Reset button GAS FAILURE

Switching ON/OFF

- Switch ON by pressing button (1), 2s
- Switch OFF by pressing button (1), > 2s

230V AC operation

- Select "Mains voltage" by pressing button (2)
- Set temperature step by pressing button (6)

12V DC operation (vehicle's battery)

- Select "Battery voltage" by pressing button (4)
- Set temperature step by pressing button (6)

Gas operation

- Select "Gas" by pressing button (3)
- Set temperature step by pressing button (6)

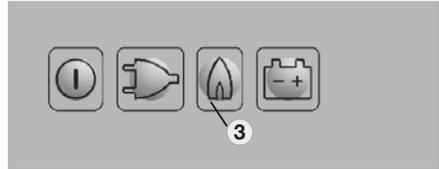
Electrical operation

To start the refrigerator, press button (1) for 2 seconds.

The refrigerator starts with the last selected type of energy.

230V operation : 
Press button (2) :

12V operation : 
Press button (4) :

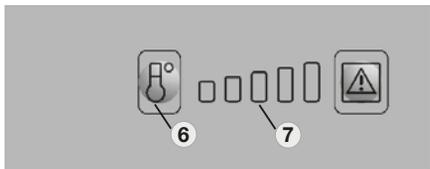
Gas operation**Gas operation :**

Press button (3) : 

The ignition process is activated automatically by means of an automatic igniter.

Note: The flame extinguishes after reaching the preset cooling compartment temperature and ignites again if the cooling compartment temperature increases again. If the flame is not lit after the first ignition attempt, the automatic igniter repeats the ignition twice (duration 30 s) at time intervals of 2 minutes. If the flame is not lit afterwards, a fault is indicated.

Setting of cooling compartment temperature



Select the desired cooling compartment temperature by pressing button (6) .

The LED display (7) of the selected temperature setting is illuminated.

The scale starts with **MIN position** at the left LED position (small bar = highest temperature) and climbs up to **MAX position** at the right LED position (large bar = lowest temperature).

Note: The temperature levels do not relate to absolute temperature values.

Additional features (MES / AES)

- The brightness of the display reduces after a few seconds if no other buttons are pressed. The indicator lights again if a button is pressed. Press the button again to activate the required function.
- Failures are indicated by flashing of the failure indicator LED.
- Should the door be kept open for too long (more than 2 minutes), an acoustic signal is initiated (pulsing whistle tone).
- Should the electronic control detect any failure, an acoustic signal will sound (pulsing whistle tone). At the same time the display starts flashing (for trouble-shooting, please refer to page 108).

Gas operation with internal batteries (optional)

An optional battery compartment in the electronics case for internal (self-contained) power supply of the electronics is available for the model variants RM 8x1 and RM 8x5 (appliances with electronics).



Battery compartment

Load the battery compartment with batteries (8 x AA 1.5 V) before operating the refrigerator.

All operating modes can be selected while the on-board 12 V DC power supply is active. The internal voltage is disconnected.

If the on-board 12 V DC power supply is not present or there is an interruption of the mains power supply during operation, the electronics automatically switch to the internal (battery) power supply.

The refrigerator can now only be operated in the gas mode.

All LED indicators except the GAS LED are not lit during operation with internal batteries. The GAS LED flashes every 15 seconds. If a button is pressed, the temperature level LEDs (7) also light.

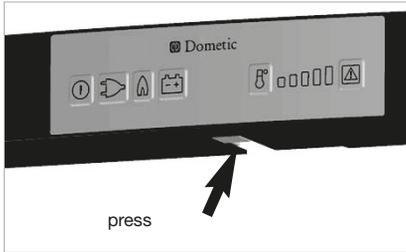
If the battery voltage is too low, an acoustic signal (whistle tone) sounds every 15 seconds.

Then replace the batteries in the battery compartment.

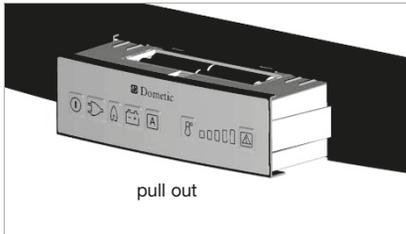
Inserting / changing the batteries

- Switch off the refrigerator, as described in section 4.17 Shutting of the refrigerator.

DOMETIC ABSORPTION REFRIGERATOR



Opening battery compartment



Note: Batteries (8 x AA 1.5V) are not included!

⚠ WARNING:

- Observe the correct polarity !
- Do not connect non-rechargeable batteries to a charger.
- Remove rechargeable batteries from the battery compartment before charging.
- Avoid short circuits on the contacts in the battery compartment!
- Remove discharged batteries.
- Remove the batteries from the battery compartment if the refrigerator will not be used for a long time.
- Do not mix different types of batteries.

Door locking

⚠ WARNING: As a basic rule, shut and lock the refrigerator before you start your journey!

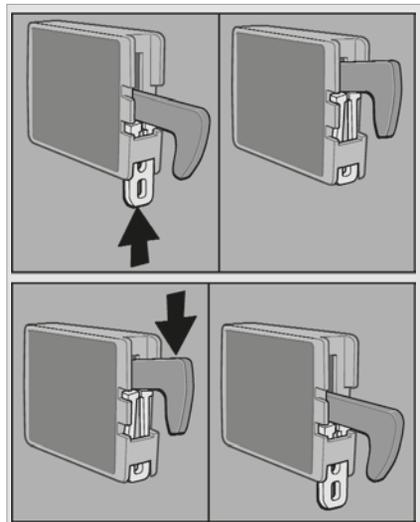
Mechanical door lock



Open the door by pressing the locking button and pull open. Shut the door again by pushing it to close. The snapping into the lock can be heard. While the vehicle is parked, the locking hook may be fixed to facilitate opening of the door.

Fastening and releasing the door lock hook when parking the vehicle

If the vehicle is parked for a longer period of time, the locking hook may be clamped by means of a lockbar. The door may now be opened by just pulling it without need of pressing the locking button.



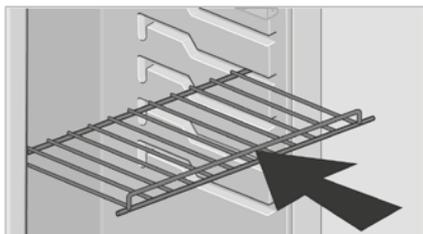
Lighting

If the door is open for more than 2 minutes, the sensor-controlled interior lighting is automatically cut off (except for models with battery igniter).

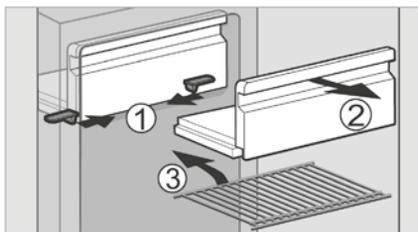
Note: Please contact the authorised Dometic Service if a failure occurs.

Positioning the storage racks

The storage racks may be pulled out by smoothly lifting them and may be positioned as desired.



Removable freezer compartment (where applicable)



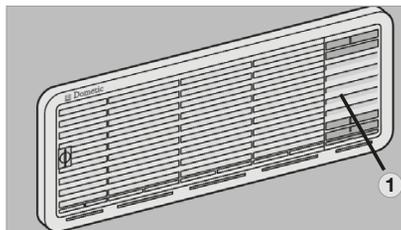
To enlarge the cooling compartment, just remove the freezer compartment.

1. Unlock the freezer compartment on both sides.
2. Pull the freezer compartment out.

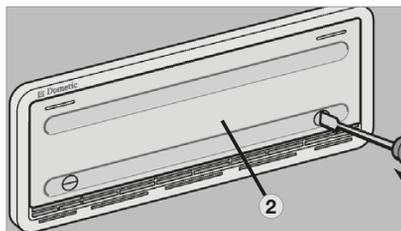
Store the freezer compartment safely in order to prevent damage.

Once the freezer compartment is removed, an additional storage rack (3.) may be installed. The storage rack is a piece of extra equipment and may be obtained by Dometic.

Winter operation



In winter, check that the ventilation grilles and the exhaust duct system (1) have not been blocked by snow, leaves, etc.



When the outside temperature falls below +10°C, the winter covers should be fitted. This protects the unit from excessively cold air which could have adverse effects on the performance of the unit.

Covers may be supplied as part of the specification of your motorhome or alternatively are available through most Swift Group dealers

Note: You should also attach the winter covers if the vehicle is taken out of service for a longer period of time or while it is being cleaned from the outside.

DOMETIC ABSORPTION REFRIGERATOR

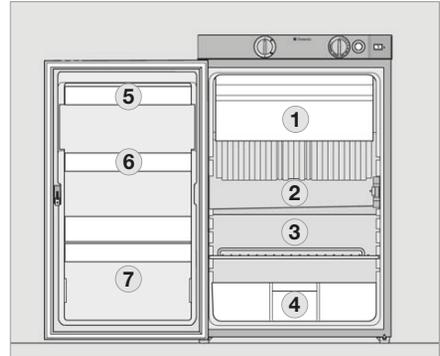
Storing food and making ice cubes**Storing products in the cooling compartment**

- Switch the refrigerator on approx. 12 hours before filling it.
- Always store pre-cooled foods in the refrigerator. Make sure that the food is well cooled when it is bought and also when transporting it. Use insulated cooling bags.
- Open the refrigerator door only for a short period of time when removing products.
- Products must be packed - best of all in closed containers, wrapped in aluminium foil or similar - and stored separately from each other, in order to prevent drying out or odours.
- Allow foods that have been warmed up to cool down before storing.
- Avoid storing products in the refrigerator that could emit volatile flammable gases.
- Do not overfill the storage grids and compartments to prevent obstructing the internal air circulation.
- Maintain a clearance of approx. 5 - 10 mm between chilled products and post-evaporator ("cooling fins").
- Do not expose the refrigerator to direct sunlight. Please bear in mind that the temperature inside a closed vehicle increases sharply if exposed to sunlight and that this can reduce the efficiency of the refrigerator.
- Ensure that air circulation of the cooling unit is not obstructed. Keep the ventilation grilles free from obstructions.

Storing products in the cooling compartment

- Do not keep carbonated drinks in the freezer.
- The freezer compartment is suitable for making ice cubes and for short-term storage of frozen food. It is not suitable as a means of freezing foods.

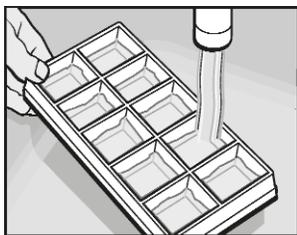
When ambient temperatures are lower than +10°C and the refrigerator is exposed to these temperatures for extended periods of time, an even regulation of freezer temperature cannot be guaranteed for system related reasons. This can cause the temperature in the freezer to rise and the stored goods to melt.

Refrigerator compartments

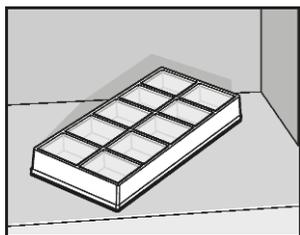
- 1. Freezer compartment :**
already frozen food (deep-frozen food)
- 2. Middle compartment:**
Dairy products, convenience food
- 3. Bottom compartment:**
Meat, fish, food for defrosting
- 4. Vegetable compartment:**
Salads, vegetables, fruit
- 5. Top door shelf:**
Eggs, butter
- 6. Middle door shelf:**
Cans, dressings, ketchup, jam
- 7. Bottom door shelf (drinks compartment):**
Drinks in bottles or bags

Making ice cubes

Ice cubes are best frozen overnight. At night, the refrigerator has less work to do and the unit has more reserves.



1. Fill the ice cube tray with drinking water.



2. Place the ice cube tray in the freezer compartment.

⚠ WARNING: Only use drinking water!

Shutting off the refrigerator

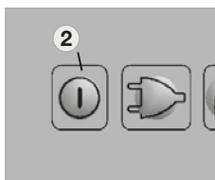


Fig. 1

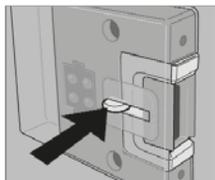


Fig. 2

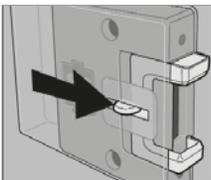


Fig. 3

- Switch off MES and AES models by pressing button (2). Keep button (2) pressed for 3 seconds. The display disappears and the appliance is fully switched off (Fig. 1).

- Release the locking mechanism of the door lock by pushing it and shift it to the front. If the door is shut in this position, a small gap is nevertheless kept open to prevent formation of mildew (Fig. 2+3).
- If the refrigerator is to be taken out of service for an extended period of time, close the onboard shut-off valve and the cylinder valve.

Defrosting

As time goes by, frost builds up on the fins inside the refrigerator. A layer of frost thicker on one side may occur and does not represent a malfunction. When this layer of frost is about 0.118 inches (3 mm) thick, the refrigerator should be defrosted.

- Switch off the refrigerator, as described above - Shutting of the refrigerator.
- Remove all food and the ice cube tray.
- Leave the refrigerator door open to allow air to enter and to prevent formation of mildew.
- After defrosting (freezer compartment and fins free of frost), wipe both cooling compartments dry with a cloth.

Note: Water thawing in the main compartment of the refrigerator runs into an appropriate container at the back of the refrigerator. From there, the water evaporates.

⚠ WARNING: The layer of ice must never be removed forcibly nor may defrosting be accelerated using a heat source!

Troubleshooting

Failure: The refrigerator does not cool sufficiently.

Possible cause	Action you can take
Inadequate ventilation to the unit	Check that the ventilation grilles are not covered
Thermostat setting is too low	Set thermostat to a higher level
The condenser is heavily frosted	Check that the refrigerator door closes properly
Too much warm food has been stores inside within a short period of time	Allow warm food to cool down before storage
The appliance has been running for only a short period of time	Check whether the cooling compartment works after approx 4-5 hours
Ambient temperatures too high	Regularly remove ventilation grilles.

Failure: The refrigerator does not cool in gas operation mode.

Possible cause	Action you can take
Gas cylinder empty	Change gas cylinder
Is the upstream shut-off device open?	Open shut-off device
Air in the gas pipe?	Switch off the appliance and start again. Repeat this procedure 3-4 times, if necessary.

Failure: The refrigerator does not cool in 12 V operation.

Possible cause	Action you can take
On-board fuse defective	Fit new fuse
On-board battery displaced	Check battery, charge it
Engine not running	Start engine
Heating element defective (please refer to failure indication)	Please inform the Dometic Customer Services.

Failure: The refrigerator does not cool in 230 V operation.

Possible cause	Action you can take
On-board fuse defective	Fit new fuse
Vehicle not connected to mains supply voltage	Make a connection to a mains power supply
AES: Gas operation despite connection to the mains supply voltage?	Appliance switches to gas operation due to insufficient mains supply voltage (automatically switches back to 230 V operation)
Heating element defective (please refer to failure indication)	Please inform Dometic Customer Services

Information on failure display and trouble-shooting

- Refrigerators with an electronics system (MES, AES) indicate the occurrence of a malfunction by the LED or display flashing.
- If a malfunction occurs, the indicator LED "Failure" (8) flashes simultaneously. In the case of AES models an acoustic alarm sounds.

Before notifying the authorised Service Centre, please check whether:

- the instructions in section "Operating the refrigerator" have been observed.
- the refrigerator stands level.
- it is possible to operate the refrigerator with any available power source.

Status indicators



1. Button ON / OFF

2. Energy selector switch 230 V AC

3. Energy selector switch GAS

4. Energy selector switch 12V DC

6. temperature level button

7. temperature level display

8. fault LED / GAS FAULT reset button

TROUBLESHOOTING

Operation with on-board 12 v power supply

Indicator	Fault	Remedy
(2) and (8) flashing and acoustic signal 20s	230 V mode: "230V" not available or voltage too low	Check mains power connection, mains voltage, fuse
(4) and (8) flashing and acoustic signal 20s	12 V mode: "12V" not available or voltage too low	Check 12V connection, on-board battery, fuse
(3) and (8) flashing and acoustic signal 20s	Gas mode: Flame not ignited	Check gas supply (gas bottle, gas valve) Press the (8) button after clearing the fault
Acoustic signal, 15s at two minute intervals	Interior lighting is switched on	Close door, check door contact
(2) and (7) flashing and acoustic signal 20s	230 V mode: 230V heating element defective	Arrange replacement of 230V heating element, contact Customer Service
(4) and (7) flashing and acoustic signal 20s	12 V mode: 12V heating element defective	Arrange replacement of 12V heating element, contact Customer Service
(7) flashing and acoustic signal 20s	Temperature sensor without contact or defective	Contact Customer Service
(3) and (7) flashing and acoustic signal 20s	Burner defective or cooling unit defective	Check burner, burner nozzles, if necessary contact Customer Service and arrange replacement

Thetford oven

⚠ WARNING: Before using the appliances for the first time, remove all accessories and packing in the grill and oven, including any surface protection film, i.e. plastic coating. Clean all interior surfaces with hot soapy water to remove any residual protective covering of oil and rinse carefully.

⚠ WARNING: Accessible parts may be hot when the grill is used, young children should be kept away. When cooking always ensure young children are kept away.

Ensure the gas cylinder is turned on. In the event of a gas smell, turn off at the cylinder and contact supplier. The burners on this appliance have fixed aeration and no adjustment is required. Depending on the gas being used, the burners should flame as follows:

Propane: The flames should burn quietly with a blue/green colour with no sign of yellow tips.

Butane: Normally on initial lighting, as small amount of yellow tipping will occur and then slightly increases as the burner heats up.

⚠ WARNING: The control tap on this appliance operates both the grill and oven burners. To ensure safe operation it is not possible to operate both burners at the same time.

Using the hob burners

1. Ensure gas cylinder/supply is connected and turned on. In the event of a gas smell turn off at gas cylinder/mains and contact supplier
2. Flame supervision: Each burner is controlled individually and is monitored by a thermocouple probe. In the event of the burner flames being accidentally extinguished, turn off the burner control and do not attempt to re-ignite the burner for at least one minute.
3. To light: Push in the control knob and turn to full rate - see Fig.2. Hold a lighted match or taper to the burner and push the control knob

in and hold. It is necessary to hold the knob depressed after the burner has ignited or approximately 10-15 seconds, to allow the thermocouple probe to reach temperature, before releasing the knob. Should the flame go out when the knob is released, the procedure should be repeated holding the knob depressed for slightly longer.

4. For models fitted with spark ignition the procedure is similar except that the burner can be ignited by depressing the ignition button, which is located on the fascia. If the burner has not lit within 15 seconds the control knob should be released and the burner left for at least 1 minute before a further attempt to ignite the burner.
5. For simmering, turn the knob further anti-clockwise to the low rate position.
6. To turn off: Turn the control knob until the line on the control knob is aligned with the dot on the control panel. Always make sure the control knob is in the off position when you have finished using the hotplate burners.

⚠ WARNING: The two in line hob burners on this appliance will support pans from 10cm to 20cm. The single hob burner will support pans from 10cm to 22cm.

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

⚠ WARNING: The use of the electric hotplate and gas hobs will generate heat. We recommend, to avoid excess build-up of heat around the cooker area, the window is left opened when cooking to allow for additional ventilation.

THETFORD OVEN

Using the hotplate

Ensure the electricity is switched on.

The hotplate control is numbered from 1 to 6. To turn it on, rotate the knob either clockwise or anti-clockwise to the required position. Position 1 is the coolest setting. To turn the hotplate off, rotate the knob until the line or pointer on the knob lines up with the zero on the control panel.

The hotplate is a sealed construction and transfers heat through conduction. For maximum efficiency a correctly sized pan with a flat heavy gauge base should be used. Pan size should be the same or slightly larger (up to 1 7/8" / 2.5cm oversize).

Before using your hotplate for the first time, we recommend that you prime and then season it.

To prime the Hotplate

Switch 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. A non toxic smoke may occur during this process. Allow it to cool, then season.

To season the Hotplate

First heat the hotplate for 30 seconds on a medium setting, then switch 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.

Using the grill

⚠ WARNING: The grill must only be used with the door open. The heat deflector below the fascia should be pulled out prior to lighting the grill. Never adjust the heat deflector position without using hand protection i.e. oven gloves.

1. Ensure gas cylinder/supply is connected and turned on. In the event of a gas smell turn off at gas cylinder/mains and contact supplier.
2. To light: Open door, push in the control knob and turn to full rate - see Fig 2. Hold alighted match or taper to the burner and push the control knob in and hold. The burner should ignite and the control knob should be held in for 10-15 seconds before release. If the burner goes out, repeat procedure holding control knob for slightly longer.
3. For models fitted with spark ignition the procedure is similar except that the burner can be ignited by depressing the ignition button, which is located on the fascia. Ignition must be carried out with the door open, and if the burner has not lit within 15 seconds the control knob should be released and the grill left for at least 1 minute before a further attempt to ignite the burner.
4. On first use of the grill, it should be heated for about 20 minutes to eliminate any residual factory lubricants that might impart unpleasant smells to the food being cooked. A non-toxic smoke may occur when using for the first time so open any windows and turn on mechanical ventilators to help remove the smoke.
5. Although the grill does heat up quickly, it is recommended that a few minutes pre-heat be allowed.
6. Flame Failure Device (FFD): The grill burner is fitted with a flame sensing probe, which will automatically cut off the gas supply in the event of the flame going out. In the event of the burner flames accidentally being extinguished, turn off the burner control and do not attempt to re-ignite the burner for at least one minute.
7. It is normal for the flames on this burner to develop yellow tips as it heats up, particularly on Butane.
8. A reversible grill pan trivet enables the correct grilling height to be achieved.

Fast toasting - trivet in high position

Grilling sausages - trivet in high position

Grilling steak/bacon - trivet in high position

Grilling chops, etc. - trivet in low position

Slow grilling - trivet removed

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

⚠ WARNING: The pan supplied with the appliance is multi functional, for use either whilst grilling or when using the oven. The handle design allows removal or insertion whilst the pan is in use.

Using the oven

- Ensure gas cylinder/supply is connected and turned on. In the event of a gas smell turn off at gas cylinder/mains and contact supplier.
- To light: Open door, push in the control knob and turn to gas mark 9. Hold a lighted match or taper to the burner and push the control knob in and hold. The burner should ignite and the control knob should be held in for 10-15 seconds before release. If the burner goes out, repeat the process holding control knob for slightly longer.
- For models fitted with spark ignition the procedure is similar except that the burner can be ignited by depressing the ignition button, which is located on the fascia. Ignition must be carried out with the door open, and if the burner has not lit within 15 seconds the control knob should be released and the oven left for at least one minute before a further attempt to ignite the burner.

- Place the oven shelf in the required position and close the door. Set control knob to approximately gas mark 5 and heat the oven for about 30 minutes to eliminate any residual factory lubricants that might impart unpleasant smells to the meals being cooked. A non-toxic smoke may occur when using for the first time so open any windows and turn on mechanical ventilators to help remove the smoke.

- Although the oven does heat up quickly, it is recommended that a 10 minute pre-heat should be allowed. The oven should be up to full temperature in about 15-20 minutes.

- To turn off: Turn the control knob until the line on the control knob is aligned with the dot on the control panel.

- Shelf: The shelf has been designed to allow good circulation at the rear of the oven and are also fitted with a raised bar to prevent trays or dishes making contact with the back of the oven. To remove a shelf, pull forward until it stops, raise at front and remove.

Oven temperature control

The temperature in the oven is controlled by a thermostatic gas tap and is variable over the range 130°C to 240°C. Approximate temperatures for the settings on the control knob are shown in the table below. The temperatures indicated refer to the centre of the oven and at any particular setting the oven will be hotter at the top and cooler towards the base.

The variation between top and centre, and centre to bottom is approximately equivalent to one gas mark. Good use can be made of the temperature variation in several dishes requiring different temperatures may be cooked at the same time. In this way maximum benefit can be obtained from the gas used to heat the oven. Care should be taken not to overload the oven, adequate spacing being used to allow free circulation for heat.

THETFORD OVEN / SMEV MINI GRILL

Cooking guidelines

See user instructions.

Do's and Don'ts

Do read the user instructions carefully before using the appliance for the first time.

Do allow the oven to heat before using for the first time, in order to expel any smells before the introduction of food.

Do clean the appliance regularly.

Do remove spills as soon as they occur.

Do always use oven gloves when removing food shelves and trays from the oven.

Do check that controls are in the off position.

Don't allow children near the cooker when in use. Turn pan handles away from the front so that they cannot be caught accidentally.

Don't allow fats or oils to build up in the oven tray or base.

Don't use abrasive cleaners or powders that will scratch the surfaces of the appliance.

Don't under any circumstances use the oven as a space heater.

Don't put heavy objects onto open grill and oven doors.

Leaks

If a smell of gas becomes apparent, the supply should be turned off at the cylinder IMMEDIATELY. Extinguish naked lights including cigarettes and pipes. Do not operate electrical switches. Open all doors and windows to disperse any gas escape. Butane/Propane gas is heavier than air; any escaping gas will therefore collect at low level. The strong unpleasant smell of gas will enable the general area of the leak to be detected. Check that the gas is not escaping from an unlighted appliance. Never check for leaks with a naked flame, leak investigation should be carried out using a leak detector spray.

SMEV mini grill

Use the appliance only in a well ventilated space.

The ventilation openings must remain open when the appliances are operating.

Ignition of the appliance**1. Manual ignition: oven - grill**

- Push in control knob, slightly turn to ignition position, light burner with match or lighter and keep knob pushed for 5 - 10 sec.
- Release knob and turn it to required position.

2. Automatic ignition: oven - grill

- For igniting oven or grill, open oven door completely
- Push In control knob, slightly turn to ignition position keeping it pushed in for 5 - 10sec.
- Release knob and turn it to designed position.

Note: Oven and grill burners will not light, if door is not completely open.

3. Ignition of appliances with thermostat

Proceed according to paragraphs 1 and 2, with or without electronic ignition. The ignition position is obtained by turning control knob on a position between 1 and 6 for the oven and grill position (see symbol ▼▼▼▼)



For ovens with thermostat the different positions of the knob correspond to the following temperatures in °C of the oven

POS	1	2	3	4	5	6
TEMP	130	160	180	200	220	240

⚠ WARNING: If ignition is unsuccessful, repeat operation from beginning; if necessary, have the appliance checked if a gas and/or electricity failure in the appliance. If appliance absolutely does not work, close gas inlet tap and contact retailer. Before using oven for the first time, let it run at maximum temperature for the duration of 20 mins without foodstuffs inside:

⚠ WARNING: Use gloves when handling hot elements!

In the event of the burner flames being accidentally extinguished, turn off the burner control and do not attempt re-ignite the burner for at least 1 min.

Operation of the grill

- a. Pull out heat protection plate
- b. Light grill burner.
- c. Keep oven door half-open
- d. Do not use for more than 20 minutes.

Use of the rotisserie

Insert dripping-pan with the rotisserie installed as indicated in (fig 5a). Push in the appropriate button (fig 4a) in order to set going the rotisserie motor.

Use of the Grill

- a. Slide out heat protection plate.
- b. Light grill burner
- c. Keep oven door in half-open position.

Use with Oven:

- a. Light oven burner
- b. Position control knob on desired temperature
- c. Close oven door.

SMEV hotplates

Use the appliance only in a well ventilated space.

To use

1. Ensure gas cylinder is connected and turned on and the shut off valve at the manifold is open. In the event of a gas smell turn off at gas cylinder and contact supplier.
2. Flame supervision: Each burner is controlled individually and is monitored by a thermocouple probe. In the event of the burner flames being accidentally extinguished, turn off the burner control and do not attempt to re-ignite the burner for at least one minute.

The ventilation openings must remain open when the appliances are operating.

SMEV HOTPLATES

Ignition of the appliance**1. Manual ignition hotplate**

- a. Push in control knob, slightly turn to ignition position (big flame).
Light burner with match or lighter keeping knob pushed in for 5 – 10 sec.
- b. Release knob and turn it to the required position (big or small flame).

2. Automatic ignition: hotplate

- a. Push in control knob, slightly turn to ignition position (big flame). Light the burner by pressing the ignition key and holding down the knob for 5- 10 seconds.
- b. Release knob and turn it to required position.

⚠ WARNING: If ignition is unsuccessful, repeat operation from beginning; if necessary have the appliance checked if a gas and/or electricity failure in the appliance. If appliance absolutely does not work, close gas inlet tap and contact retailer. Pans of a diameter ranging from 10 to 22 cm may be used.

During grill operation, do not obstruct the hole in the centre of the burners where heat and smoke can come out. The heat coming out of this hole may be used to heat up or cook food by placing a saucepan or frying pan over it.

⚠ WARNING: Use gloves when handling hot elements.

Never lay Pyrex lids or other items on the burners. Cooking facilities must not be used to heat the environment.

The slots indicated in fig.1 must be kept open.

Visual flame control

- a. The flame is right, when its internal tongue is blue and its outline well defined.
- b. If the flames have yellow tips and little pressure, consult your dealer.

LEAKS

If a smell of gas becomes apparent, the supply should be turned off at the cylinder **IMMEDIATELY**. Extinguish naked lights including cigarettes and pipes. Do not operate electrical switches. Open all doors and windows to disperse any gas escape. LPG gas is heavier than air; any escaping gas will therefore collect at a low level. The strong unpleasant smell of gas will enable the general of the leak to be detected. Check that the gas is not escaping from an unlighted appliance. Never check for leaks with a naked flame, leak investigation should be carried out using a leak detector spray.

Cleaning instructions

Do not use chemical or abrasive detergents.

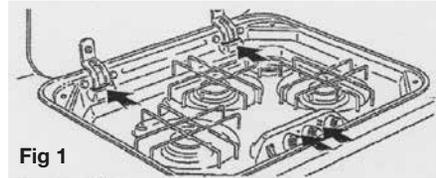


Fig 1

Microwave oven general user instructions

Always refer to the microwave operating instructions supplied with the vehicle

Precautions to avoid possible exposure to excessive microwave energy

- a. Do not attempt to operate this oven with the door open since open door operation can result in harmful exposure to microwave energy. It is important not to defeat or tamper with the safety interlocks.
- b. Do not place any objects between the oven front face of the door or allow soil or cleaner residue to accumulate on sealing surfaces.

WARNING:

- c. if the door or door seals are damaged, the oven must not be operated until it has been repaired by a competent person.

WARNING:

- d. it is hazardous for anyone other than a competent person to carry out a service or repair operation.

WARNING:

- e. liquids or other foods must not be heated in sealed containers since they are liable to explode.

WARNING:

- f. only allow children to use the oven without supervision when adequate instruction has been given so that the child is able to use the oven in a safe way and understands the hazards of improper use.

WARNING:

- g. when the appliance is operated in the combination mode, children should only use the oven under adult supervision due to the temperature generated. (if provided)

Important safety guidance

 **WARNING:** To prevent fire, burns, electric shock and other warnings. Listed below are, as with all appliances, certain rules to follow and safeguards to assure high performance from this oven:

Important instructions

1. Do not use the oven for any reason other than food preparation, such as for drying clothes, paper, or any other non food items or for sterilizing purposes.
2. Do not use the oven when empty, this could damage the oven.
3. Do not use the oven cavity for any type of storage, such as papers, cookbook, cookware etc.
- 4 Do not operate the oven without the glass tray in place. Be sure it is sitting properly on the rotating base.
5. Make sure you remove caps or lids prior to cooking when you cook food sealed in bottles.
6. Do not put foreign material between the oven surface and door. It could result in excessive leakage of microwave energy.
7. Do not use recycled paper products for cooking. They may contain impurities which could cause sparks and/or fires when used during cooking.
8. Do not pop popcorn unless popped in a microwave approved popcorn popper or unless it's commercially packaged and recommended especially for microwave ovens. Microwave popped corn produces a lower yield than conventional popping; there will be a number of unpopped kernels. Do not use oil unless specified by the manufacturer.
9. Do not cook any food surrounded by a membrane, such as egg yolks, potatoes, chicken livers, etc., without first piercing them several times with a fork.

MICROWAVE OVEN

10. Do not pop popcorn longer than the manufacturer's directions. (Popping time is generally below 3 minutes). Longer cooking does not yield more popped corn it can cause scorching and fire. Also, the cooking tray can become too hot to handle or may break.
11. If smoke is observed, switch off or unplug the appliance and keep the door closed in order to stifle any flames.
12. When heating food in plastic or paper containers, keep an eye on the oven due to the possibility of ignition.
13. The contents of feeding bottles and baby food jars shall be stirred or shaken and the temperature checked before consumption, in order to avoid burns.
14. Always test the temperature of food or drink which has been heated in a microwave oven before you give it to somebody, especially to children or elderly people. This is important because things which have been heated in a microwave oven carry on getting hotter even though the microwave oven cooking has stopped.
15. Eggs in their shell and whole hard-boiled eggs should not be heated in microwave ovens since they may explode, even after microwave heating has ended.
16. Keep the waveguide cover clean at all times. Wipe the oven interior with a soft damp cloth after each use. If you leave grease or fat anywhere in the cavity it may overheat, smoke or even catch fire when next using the oven.
17. Never heat oil or fat for deep frying as you cannot control the temperature and doing so may lead to overheating and fire.
18. Liquids, such as water, coffee, or tea are able to be overheated beyond the boiling point without appearing to be boiling due to surface tension of the liquid. Visible bubbling or boiling when the container is removed from the microwave oven is not always present. **This could result in very hot liquid suddenly boiling over when a spoon or other utensil is inserted into the liquid.**

To reduce the risk of injury to persons:

- a. Do not overheat the liquid.
- b. Stir the liquid both before and halfway through heating it.
- c. Do not use straight-sided containers with narrow necks.
- d. After heating, allow the container to stand in the microwave oven for a short time before removing the container
- e. Use extreme care when inserting a spoon or other utensil into the container.

Care of the microwave

1. Turn the oven off before cleaning
2. Keep the inside of the oven clean. When food spatters or spilled liquids adhere to oven walls, wipe with a damp cloth. Mild detergent may be used if the oven gets very dirty. The use of harsh detergent or abrasives is not recommended.
3. The outside oven surface should be cleaned with soap and water, rinsed and dried with a soft cloth. To prevent damage to the operating parts inside the oven, water should not be allowed to seep into the ventilation openings.
4. If the central panel becomes wet, clean with a soft dry cloth. Do not use harsh detergents or abrasives on Control Panel.
5. If steam accumulates inside or around the outside of the oven door, wipe with a soft cloth. This may occur when the microwave oven is operated under high humidity conditions and in no way indicates malfunction of the unit.
6. It is occasionally necessary to remove the glass tray for cleaning. Wash the tray in warm sudsy water or in a dishwasher.
7. The roller guide and oven cavity floor should be cleaned regularly to avoid excessive noise. Simply wipe the bottom surface of the oven with mild detergent water or window cleaner and dry. The roller guide may be washed in mild sudsy water.
8. The oven should be cleaned regularly and any food deposits removed;

9. Failure to maintain the oven in a clean condition could lead to deterioration of the surface that could adversely affect the life of the appliance and possibly result in a hazardous situation.

Thetford cassette toilet

Cassette C-200CS and C200S

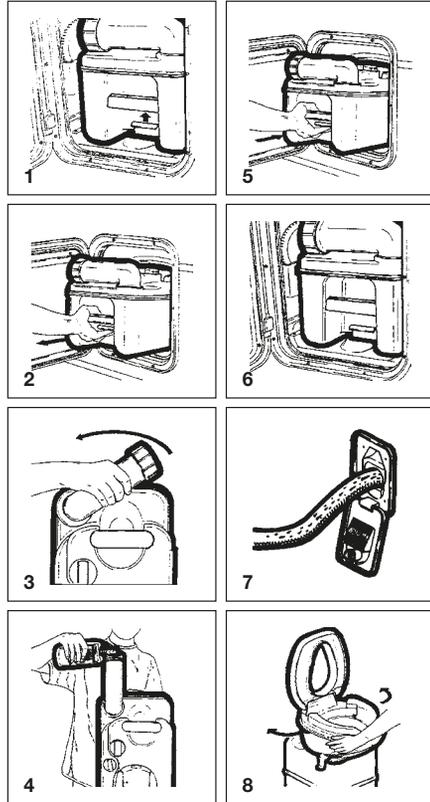
The toilet section of the C-200 includes a rotatable bowl, removable seat and cover, a console with a flush handle/flush buttons, a built in flush-watertank and a waste level warning indicator. The valve blade handle is located underneath the bowl.

Preparing for Use

1. Open access door pull retaining clip upwards (fig. 1).
2. Remove holding tank by pulling straight out. When holding tank hits the stop, tilt front end downwards slightly and remove (fig. 2).
3. Position tank vertically and swivel pour out spout upwards (fig. 3).
4. Remove the cap of the pour out spout. Add required quantity of toilet fluid through pour-out spout then add approx. 2 litres of water through the spout to cover holding tank bottom. Replace cap and return pour out spout to its original stored position (fig. 4).

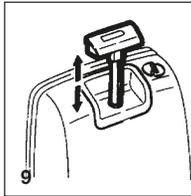
Note: Warmer weather or longer intervals between emptying the waste tank may require additional toilet fluid. Use only Thetford toilet fluid to achieve the best results.

⚠ WARNING: Never add toilet fluid directly into toilet bowl.



5. Slide the holding tank into position through access door (fig. 5).
6. Make sure the holding tank is secured by the retaining clip. (fig. 6).
7. Open the waterfill door and add 50 ml of Aqua Rinse. Aqua Rinse results in a better flush and improves the hygiene of the toilet. Then fill the watertank with fresh water using a jerrycan or a hose. Tank capacity is 7 litres (fig. 7).

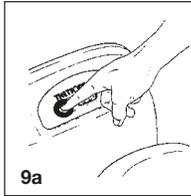
THETFORD CASSETTE TOILET



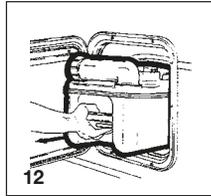
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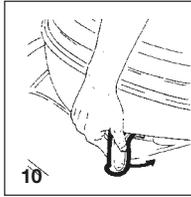
11a



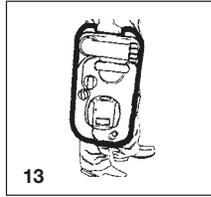
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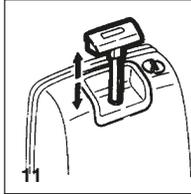
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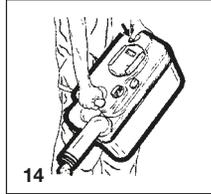
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13



11



14

11. **C-200 CW only:** After use, open valve blade (if still closed) and flush, lift the flush handle and press it down (fig. 11). After flushing, close the blade by turning the blade handle.

11a. **C-200 CWE & CS only:** After use, open valve blade (if still closed) and flush, press the flush button (fig. 11a).

After flushing, close the blade by turning the blade handle.

The waste holding tank is located underneath the toilet and is removed for emptying from the outside of the vehicle through an access door. A rotating pour out spout, automatic holding tank vent, air release valve, valve blade, carrying handles and hand grip are incorporated in the waste holding tank. A sliding cover guarantees optimal hygiene.

Emptying the Holding Tank

The holding tank capacity is approx. 17 litres and the tank should be emptied when the waste-level indicator lights up. The waste-level indicator lights up when the holding tank contains more than 15 litres of waste.

⚠ WARNING: Do not allow the holding tank to become overfilled. See trouble shooting section for emergency emptying procedure.

Operation

8. Turn the bowl in the most comfortable position (fig. 8).
9. **C-200 CW only:** Before using the toilet it is recommended to flush some water into the bowl by lifting and pressing down the flush handle (fig. 9).
- 9a. **C-200 CWE & CS only:** Before using the toilet it is recommended to flush some water into the bowl by pressing and releasing the flush button (fig. 9a).
10. The toilet may be used with the blade open or closed. Pull valve handle towards you to open (fig. 10).
11. **C-200 CW only:** After use, open valve blade (if still closed) and flush, lift the flush handle and press it down (fig. 11). After flushing, close the blade by turning the blade handle.
- 11a. **C-200 CWE & CS only:** After use, open valve blade (if still closed) and flush, press the flush button (fig. 11a).
12. Open access door and remove the holding tank. The holding tank can only be removed when the valve blade is closed (fig. 12).
13. Carry the holding tank to a normal household type toilet or other authorised disposal point. Place the holding tank in vertical position and rotate pour out spout upwards (fig. 13).
14. Remove the spout cap. Grasp unit by upper carrying handle nearest to pour out spout. Place other hand on upper rear hand grip so that vent button can be depressed with the thumb while emptying. This ensures a smooth outflow of the tank contents. (fig. 14).

Note: Only depress the vent button when pour out spout is pointed downwards. Rinse the holding tank with clean water. For preparing for use again, see steps 1 to 7.

Cleaning and maintenance

The lipseal and the seal of the automatic vent are made of rubber and therefore these parts need regular maintenance (depending on frequency of use, once or twice a month).

Lipseal: Remove the sliding cover. Open the valve-blade by turning the blade-opener knob anticlockwise. Clean the seal with water. Dry the seal and grease with silicone spray/oil or vegetable oil.

Seal of automatic vent: Turn the automatic vent 60° anticlockwise and remove gently. Clean the seal with water. Dry the seal and grease with silicone spray/oil or vegetable oil.

To clean the holding tank, empty the tank, and rinse with clean water. Use a mild soap to clean toilet bowl, seat and cover, as well as exterior of toilet unit and holding tank.

Note: Do not use strong household detergents or cleaners that contain chlorine, solvents or acid contents.

Wintering/storage

The Thetford Cassette C-200 CW/CWE/CS is easily winterised for storage.

Empty remaining fresh water into the bowl by activating the flush handle up and down (C-200 CW) or by pressing the flush button (C-200 CWE & CS).

Once pump has been cleared and water flow has stopped completely, release into waste tank. Remove waste tank and empty contents in normal way.

To evacuate any remaining water from the fresh water tank, place a container underneath the drainplug and remove drainplug.

When procedure has been completed replace drainplug and waste holding tank (fig. 15). Clean the seals and grease them after drying (see cleaning and maintenance).

Leave the blade of the holding tank open. Do not replace cap on the pour out spout, to ventilate the holding tank. (Also grease the seal of the pour out spout cap.)

Cold weather use

The toilet can be used in cold weather conditions provided that the toilet is in heated surroundings. If this is not the case, you can use a nontoxic antifreeze (propylene glycol) or an antifreeze such as those used in car radiators. Add the antifreeze to the water in the tank. Add the quantity specified in the instructions, paying due regard to the safety instructions.

High altitude and warm weather use

Pressure may build up in the holding tank if the tank is not inserted while driving at high altitudes or in warm weather conditions. The automatic holding tank vent will vent the tank when there is over- or under-pressure. High temperatures may require additional Thetford toilet fluid.

Thetford warranty

1. The Thetford Cassette is warranted for one year from the date of purchase, please fill in and return the warranty card.
2. The warranty covers replacement of defective or flawed parts and the inadequate performance of the toilet.
3. In case of a defect apply to an original dealer or Thetford Service Centre with proof of purchase.
4. Defects, which in our judgement occurred from misuse, negligence or accident, are not covered by the warranty. In addition, the warranty does not apply if the product is installed or handled improperly or if other than the prescribed toilet fluids have been used or if the product has been altered in any way or has been repaired by unqualified persons, or if the serial number and/or date has been altered or removed.
5. Should the original buyer wish to return to us parts believed to be defective, the parts should be sent prepaid. If we find the parts defective and covered by warranty, they will be repaired and returned. If warranty does

THETFORD C260 AND C260S CASSETTE TOILET

not apply or has expired, a nominal charge will be made. Any transport costs are for the account of the owner.

6. Before returning product or parts they should be properly cleaned, in order to carry out inspection and repair.
7. No other warranty is given and no personal representative is authorised to make any warranty other than that is contained herein.

Thetford C260 and C260S cassette toilet

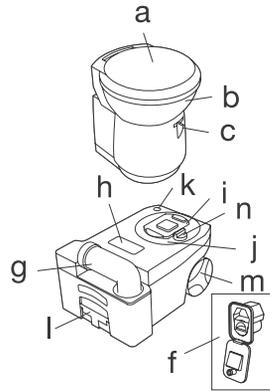
The Thetford Cassette Toilet is a high quality product. The toilet forms an integral part of your caravan or motorhome bathroom, thanks to its functional design which combines modern styling and ease of use. The C-250 Cassette Toilet is manufactured from high quality synthetic materials which makes it 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 or motorhome. The Thetford Cassette Toilet is the solution to the sanitary problem in your caravan or motorhome!

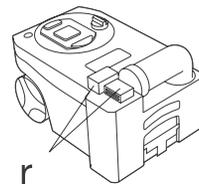
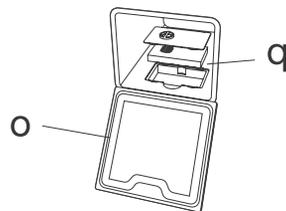
These instructions cover the C-250CWE this has its own flush-water tank.

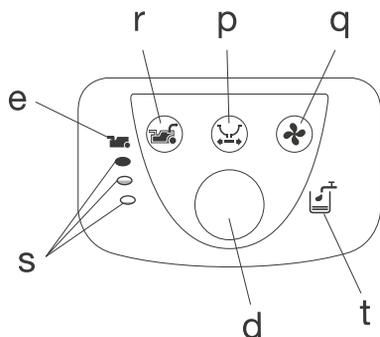
Parts

- 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)

Control panel

Preparing for use (standard)

1. Open the access door on the outside of your caravan or motorhome
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 the Thetford user 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 the Thetford user 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.

6. Slide the Waste Holding Tank back into its original position via the access door. Make sure that it is secured with the safety catch. 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.

7. 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 jerry can or hose. Your toilet is now ready to use.

Preparing for use with optional features

8. Automatic Ventilator: Open the access door on the outside of your caravan and remove the Waste Holding Tank (as described above).
9. 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 filterhousing.

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

THETFORD C260 AND C260S CASSETTE TOILET

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 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.

16. 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.
17. Pull the handle up and wheel the Waste Holding Tank to an authorised waste disposal point.
18. 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

19. **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.

20. 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.

⚠ WARNING: 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 Aqua Rinse 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. See page 46 of the Thetford user manual for more information (=matrix). 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 Pressure Release Vent using the same method in reverse.

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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.
- 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.

Thetford warranty refer to the Thetford user handbook.

Windows

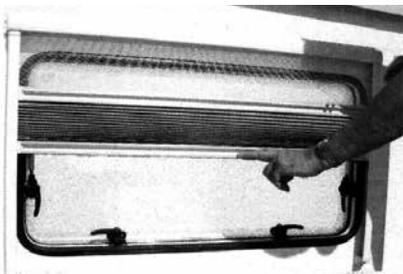


To open, turn knobs anti-clockwise and open catches. Swivel the window pane open to the desired position and close knobs clockwise to lock in the open position.

To close, reverse the operation.

All opening windows have two catch positions. The first position is for ventilation the second seals the window from ventilation and rain.

Operating instructions for blinds



Closing: Grab the end bar in the middle and push the blind and flynet together or singly (blind - lower end bar) downwards until the required position is reached.

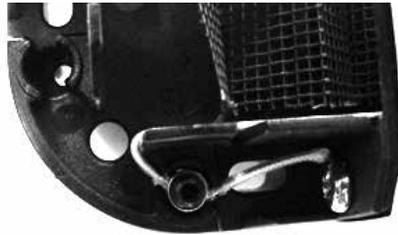
Opening: Push the end bar of the flynet and / or of the blind upwards.

Care instructions: Clean the blind only with a damp sponge. Clean on a regular basis to avoid dirt particle build up as this can damage the blind material. Use only water or with mild suds or a vacuum cleaner.

In order to avoid material fatigue, do not leave the flynet closed for a long time.

To adjust the tension of the Horrex blind:

Trim panels or window surround will need to be removed before the blind can be re-tensioned.



In each corner piece there is an cord tensioner (see photo). By unscrewing the hexagon screw, the cord can move through the cord tensioner. When you pull the cord, the tension will get higher, when you let it move back the tension will get less.

Roof lights

When opening the roof lights, care must be taken to release the locking mechanism as the unit is raised.

Roof lights must be fully closed when driving. Roof lights provide essential fixed levels of ventilation.

Mini Heki Rooflight

To open depress button and push bar upwards. The rooflight has two open ventilation positions and a fully open position.

The blind and flynet operate independently of each other and are engaged by connecting to each other and sliding.

Heki care instructions: Clean the blind only with a damp sponge. Clean on a regular basis to avoid dust/ dirt particle build up as this can damage the blind material. Use only water or with mild suds or a vacuum cleaner.

MINI HEKI ROOFLIGHT

In order to avoid material fatigue, do not leave the flynet closed for a long time.

Midi Heki Rooflight

With operating bar: To open, depress button and push bar to required position. The rooflight has two open ventilation positions and a fully open position.

To close, reverse the operation and then check if locked into position.



With crank: To open, rotate the crank until a resistance is noticeable during the operation.

To close, reverse the operation and then check if locked into position.

Blind and Flyscreen

The blind and flyscreen operate Independently of each other and are engaged by connecting to each other and sliding.

Safety precautions:

1. Repairs should be carried out only by trained personnel.
2. Inform an approved dealer in case of defects and malfunctions.
3. Before starting off, check the rooflight for damage in the acrylic dome (tension cracks) and the winding mechanism which could arise owing to, for example, branches and other natural causes.
4. Do not step in the acrylic dome.
5. Close the roof light before starting off (check whether it is locked).
6. Do not leave the vehicle with the rooflight open (danger of burglary or from rain).
7. Do not open in strong wind or rain.
8. Before opening, remove snow, ice, dirt, etc. from the acrylic dome.
9. Malfunctions are to be repaired by an approved dealer at once.
10. Do not use caustic detergents (danger of tension cracks in the acrylic dome).
11. Do not operate whilst the vehicle is moving.

Care instructions:

- Please clean the acrylic panes with the Seitz Acrylic Cleaner.
- Stains and light scratches on the acrylic pane can be removed by using the Seitz

Acrylic Polish and the Seitz special polishing cloth.

- Use talcum powder (4 times yearly) to care for the rubber seals
- Clean the blinds only with water and mild soap suds
- The guarantee becomes null and void if these instructions are not followed.

Seat swivel (Driver/Passenger)



To turn the swivel, slide the BLACK lever rearwards and adjust to the required angle. Before driving off ensure the locking mechanism is fully secure.

Bunk bed safety

Where the sleeping surface is over one metre above floor level the following notices apply.

⚠ WARNING: Always ensure safety boards are located before entering the bunk.

⚠ WARNING: Use upper bunks for sleeping only, with the provided protection against fall out in position.

⚠ WARNING: Care shall be taken against the risk of fall out when the upper bunks are being used by children, specially under 6 years of age, these bunks are not suitable for use by infants without supervision

Omnistep slide-out step

Operation

Press the “step out” key to bring the step out until it reaches the end of its run or comes up against an obstacle. The step does not come out if the engine is running. Press the “step in” key to take the step back until it reaches the end of its run or comes up against an obstacle. The step goes back in automatically when the engine is running. In this situation the buzzer sounds until the step is fully closed.

Maintenance

Dirt and frost can prevent the step from operating properly. In this case the rails and moving parts should be cleaned or defrosted.

In case of electric break down

If the step does not retract by the motor

- Remove the front plate of the step. (Fig. 1)
- Remove the connection between the footboard and the arms (with screwdriver and wrench S10).
- Slide out the footboard.
- Reinstall the front plate.

Current drawn

- Working current: 5 A
- Blocking current, when fully extended or retracted: 14 A



Fig. 1 Front plate

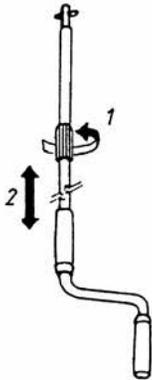
OMNISTOR AWNING

Omnistor Awning**General remarks:**

- An awning is a sun and not a rain protection. The awning should be in closed position in case of storm, snowfall or heavy rainfall.
- The awning can not be used without putting out the support arms.
- The fabric may not be rolled up wet for a longer period.
- Clean the awning only by using water or OMNI CLEANER.

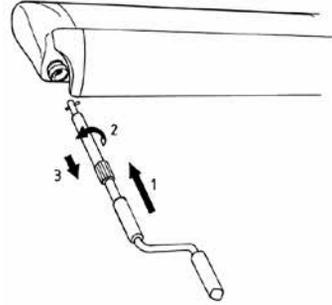
Users instructions:

1. Adjust the crank to the required height.



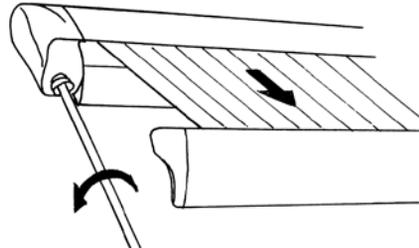
1

2. Introduce the crank arm into the bayonet joint.



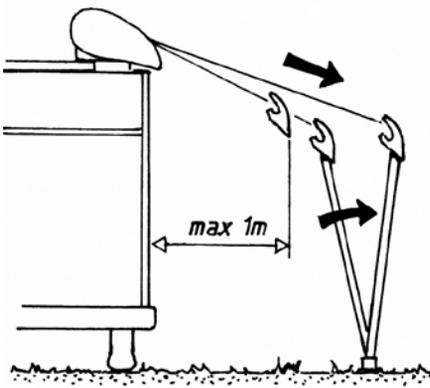
2

3. Unroll the awning while keeping the crank down. The awning will only open after a couple of turnings.



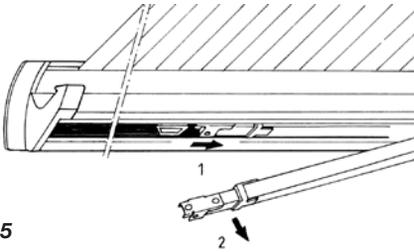
3

4. Unroll till 1 m max. Then put out the support arms before further unrolling



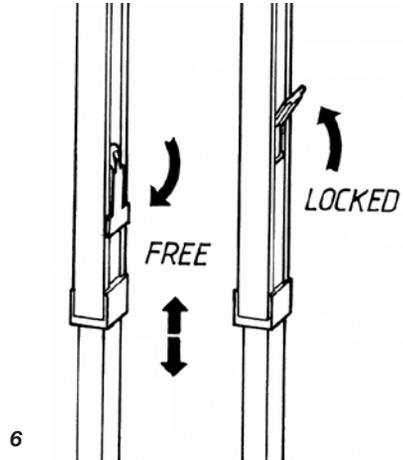
4

5. Slide the support arms out of the front profile.



5

6. Adjust them to the required height. The fabric can be tightened by rolling up a little.



6

Note: Never put out the support arms that high, that the fabric jams between the arms and the box.

7. Fasten the support arms.

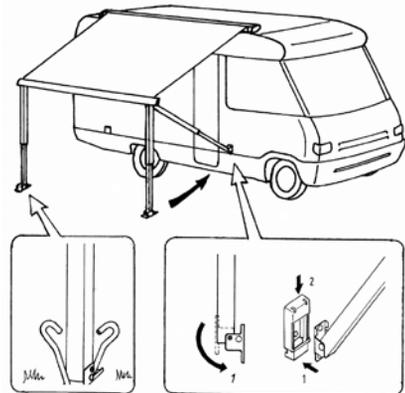
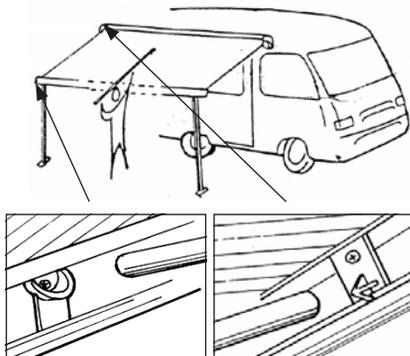


Fig. 7

OMNISTOR AWNING

8. Install the tension rafter (for 3.75 m awning).



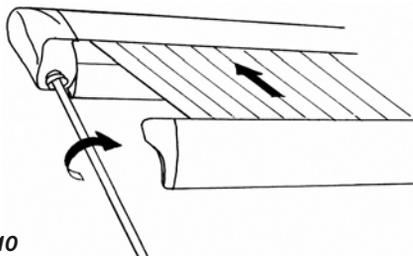
8

9. When raining, lower one side of the awning in such a way that the water can run down the fabric. Prevent the fabric from flying up by a sudden wind blow by using the hold down kit (optional).



9

10. The front profile locks automatically when rolling up



10

Status 570 Digital antenna system

Travelling

Do not travel:

- with the antenna raised
- with the antenna set for vertical signals

To reduce the possibility of damage when travelling, point the antenna backwards.

The RED SPOT on the bottom of the mast indicates the front of the Antenna.

Operating the system

Firstly determine the approximate location of the nearest transmitter and whether the signals are horizontally or vertically polarised. For assistance ask your site operator or check other antennas in the vicinity.

1. Loosen the Mast Locking Collar and raise the antenna. Rotate the mast to direct the TV transmitter.

The RED SPOT on the bottom of the mast indicates the front of the antenna.

2. Should you need to receive vertically polarised signals rotate the winder, anti-clockwise to cant the antenna through 90°. The red / green indicator in the lower part of the aerial mast indicates whether the aerial is horizontal or vertical.

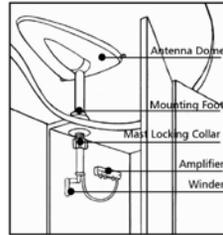
DO NOT use undue force on the winder.

3. Switch ON the amplifier and the LED will illuminate.
4. Check the gain control is set to maximum. For maximum rotate clockwise.
5. Tune your television into the strongest signal. You may need to adjust the direction of the mast to achieve the best picture quality.

6. Secure by tightening the mast locking collar.

Removing the antenna

1. Unplug the antenna lead from the amplifier.
2. Loosen the mast locking collar and lift off whilst feeding out the mast, coaxial cable and plug.
3. Push the blanking cap supplied into place.



⚠ WARNING: The blanking cap is temporary seal and is not recommended for long term use.

Technical:

Antenna dome

Height raised: 330mm
 Height lowered: 150mm
 No Antenna dome: 50mm

Mast: 365 mm

Amplifier: 115 x 45 x 29mm

Frequency Range: UHF 470-862 MHz

Antenna Forward Gain: 7db

Amplifier Gain - Max: 18db

Gain Adjustment - Min: 15db

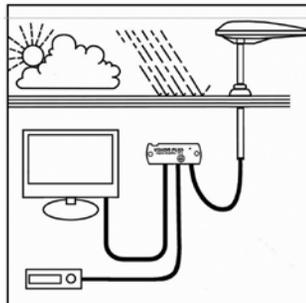
Noise Figure: 2.8db

Output Impedance: 75ohms

Output: 98 dbuV

Power Supply: 12-24 VDC

Power Consumption: 55ma



STATUS 570 ANTENNA



Fault Finding

The following are some of the key areas we suggest you check which generally solve the most common problems encountered with the operation of the Status antenna.

Coaxial Connections

It is critical that all connections in the system are fitted correctly. Using the diagrams and procedures described over the page, please check all connectors ensuring they are wired correctly. Secondly please ensure only quality plugs have been used.

Coaxial Cable

Sharp bends, kinks and hot surfaces can easily damage coaxial cable and should be avoided. Coaxial cable, if placed in close proximity to electrical cables, transformers or other pieces of electrical equipment, may pick up electrical interference causing picture quality to deteriorate, especially in poor reception areas. Excess cable should be removed and NOT coiled as this may cause picture distortion. An inspection of the routing of the cable is highly recommended to ensure all is correct.

Gain Control

In normal use the button should be rotated clockwise for maximum. In strong signal areas the amplification may need to be reduced. To reduce amplification rotate the button anti-clockwise until picture quality improves. The button rotates through 270 degrees from MAX to MIN.

LED light

Should the LED on the amplifier not light, firstly check there is power to the unit. Secondly check the polarity is correct. Otherwise contact your dealer for further assistance.

Short Hook up - Test 1

This test isolates the wiring from the amplifier through to your TV/Radio points.

Unplug the coaxial plugs from the 'TV' sockets of the amplifier and using your TV fly lead with convertor 1 supplied. Connect your TV to the amplifier.

Please ensure the antenna dome is plugged directly into the 'ANT-IN' socket of the amplifier and switch on. Tune in your TV for the strongest signal.

If the picture quality improves the fault lies with the wiring of the system between the amplifier and the TV outlet socket.

Short Hook up - Test 2

This text isolates the amplifier by connecting your TV direct to the antenna.

Unplug the antenna from the amplifier and connect convertor 2 supplied to the plug on the cable end. Using your TV Fly lead connect the antenna directly to your TV. Tune in your for the strongest signal.

If the picture quality improves, the fault lies the Vision Plus Amplifier.

Antenna Dome Coaxial Cable

Check the routing of the coaxial cable from the antenna dome to the amplifier. Check to ensure there are no kinks or trapped cable or if there are loops of surplus cable which could be affecting performance.

Signal	Symptom	Action
Very poor	No picture or sound, TV freezing, severe pixilation, break up and picture drop out	Check the amplifier gain is set to maximum (rotate clockwise). Check antenna alignment which must be directed at the transmitter. Ensure the antennas polarity is correct, whether horizontal or vertical. Bypass the amplifier by following 'Short Hook-Up Test 1'
Poor	Moderate pixilation and sound distortion	
Medium	Minor pixilation, will not receive all channels	
Good	Stable picture, good sound quality, will receive all channels	N/A
Strong	Moderate pixilation, picture break up and drop out	Reduce the amplifier gain (rotate anti-clockwise). Rotate antenna AWAY from the transmitter.
Very Strong	No picture or sound, TV freezing, severe pixilation, break up and picture drop out	Rotate antenna AWAY from the transmitter. Switch 'OFF' the amplifier and turn the gain control to maximum (rotate clockwise).

After performing any of the 'Actions' above you must re-tune your TV.

CARE OF FURNITURE

Care of laminate tops, tables, furniture and doors

DO NOT use abrasives, chemically treated cloths or aggressive detergents as these may cause damage.

DO NOT place hot objects on laminated surfaces i.e. tops, tables. Any temperatures 70°C and over will cause permanent damage.

Clean worktop surfaces, furniture and door fascias with a soft, slightly damp cloth, dry off with a soft cloth.

Furniture doors

During normal travelling, vehicle vibration and flexing may cause some of the furniture doors to become out of alignment. For your convenience many hinges are adjustable.

Table stowage / store in transit

Tables stored in the table storage compartment must be securely clipped into place whilst in transit.

To avoid damage care must be taken when removing tables from their stored position.

Shower

When using the shower, always ensure that the shower door is fully closed thus avoiding water spray on unprotected areas.

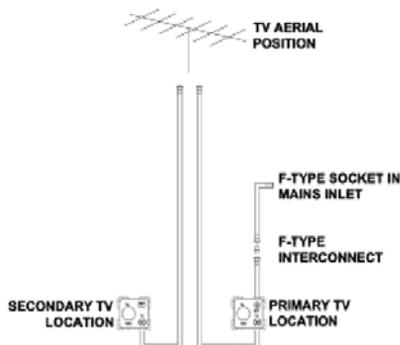
Trigger shower heads

- Squeeze trigger to release water. Release trigger to top. Twist trigger up to gain permanent water flow, lower to stop.
- Care should be taken as water may become hot temporarily when switched on until it mixes and regulates.
- Small children should be supervised at all times when using the shower.
- We recommend unfastening the trigger shower head before travelling and storing safely to prevent it becoming detached whilst travelling.

TV inlet

Depending on specification, the motorhome may be fitted with an external co-ax connection in place of, or in addition to, connections for a roof mounted TV aerial. The external co-ax connection point will be within the mains inlet enclosure.

Co-ax connection point within the mains inlet enclosure



A short co-ax lead featuring a screw on co-ax connection will be present behind the Blue mains inlet connector. A co-ax cable will be fitted and connected within the motorhome, from the back of this connection, to the primary TV position within the motorhome. At the same time, further co-ax cable or cables will be fitted which route from a likely TV aerial position (i.e. within the wardrobe) to each of the TV positions within the motorhomes.

The primary TV position will feature a socket marked 12V, TV, and SAT. The co-ax from the external connection point will route to the socket output marked SAT, whilst the co-ax from the wardrobe or similar will route to the socket output marked TV. At any secondary TV positions, if present, the co-ax from the wardrobe will route to the socket output marked TV.

An external TV aerial or site TV feed can be connected to the external connection point; signals from that connection will then be available at the primary TV position within the motorhome. As the connections are of the screw-on type, it is also possible to use this co-ax to route from an externally mounted satellite dish, to a satellite receiver.

Colour reference

The colour code for touch ups or resprays for all white Fiat cabs and Swift coach built habitational body components is Fiat White 249. For Fiat cabs other than white, contact your Fiat dealer or obtain a colour match.

Please be aware that colours can fade over time, and therefore, if the vehicle is more than a few years old, it is suggested a colour match be obtained.

SLIDING DOOR FLYSCREEN

Sliding Door Flyscreen**Operation**

The sliding door flyscreen runs on tracks mounted to the floor and the Control panel and moves from left to right. It is tensioned with cords that are fixed at floor level near to the passenger seat.

When the vehicle sliding door is open pull the blind from the central part of the vertical handle avoiding twisting to close the blind.

Ensure flynet is open before closing the vehicle sliding door.

Care

Clean only with a damp sponge ensuring dirt build that would affect the running tracks is removed. Use only clean water with mild suds or a vacuum cleaner. In order to avoid material fatigue, do not leave the flyscreen closed for a long period. Take care with high winds when the flynet is closed.



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Winterisation

The Swift Group recommends the following winterisation points for customers.

Servicing

Arrange (in advance) the yearly service and habitation check, if the motorhome's next service is due while the vehicle is stored.

Plumbing

Water expands as it is frozen, and so trapped water, when it expands, can damage the tap / valve / pump or pipe it is trapped within. For this reason, (in addition to reasons of hygiene), the water system should be fully drained when not in use, particularly in colder weather.

- Depending on model, open the fresh water tank drain valve to drain the tank, and leave open or remove the tank drain bung inside the tank, and leave open
- Open the drain valve (yellow handle) next to water heater, and leave open.
- Fully open all the taps and shower mixer, move mixer position to the middle, and leave all taps in the open position.
- Unscrew the shower head and shower hose, shake out remaining water and allow water to drain. It is advised to leave the shower head and hose disconnected.
- Run pump for a short time, until all water is expelled.
- After a short while the majority of water will have left the plumbing system. At this point however it is still important to ensure that the pump itself is 'dry'. During this part of the winterisation, a suitable absorbent cloth or container should be used to catch a small amount of spilled water that will result.

Disconnect the pipe work from the pump by pulling the blue quick release tabs, at either side of the pump, at right angles to the pipe work, then pulling the pipe and connectors from the pump. See Fig.1 Run the pump for a short while to expel any remaining water within the pump.

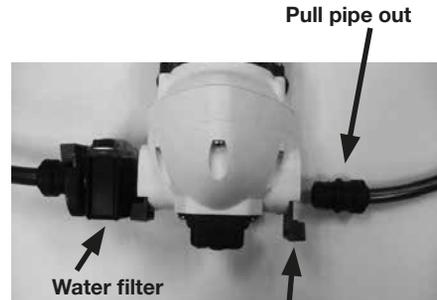


Fig 1

**Pull quick
release tabs**

- This is a good time to de-assemble and clean the pump filter. Squeeze either side of the filter housing to release the retaining tabs and pull the filter cassette out of the housing. See Fig 2

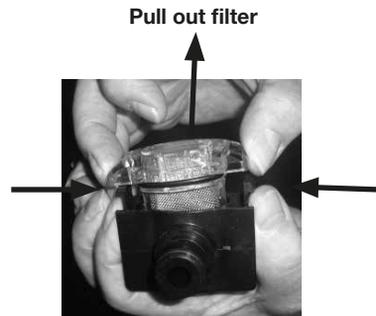


Fig 2

**Squeeze either
side of filter
housing**

- Fit the cowl cover to the Truma Ultrastore, model specific.
- Open the waste tank drain valve, collecting the waste water in a suitable container, and leave open. Dispose of the waste water in a designated waste water area, clean waste pipes and tanks using a sterilising fluid. See "Waste Tank" section under services Page 49.

Electrical

If vehicle is being stored while connected to 230v Mains Hook-up:

- Ensure that the leisure battery is connected and the 20A local fuse(s) is connected.
- The isolator switch on PSU should be in the 'ON' position, however, the control panel should be switched 'OFF'.
- If Alde system is installed, there is a frost protection setting, which can be used. See Alde user instruction manual.
- Vehicles can be left in this condition for extended periods, with the charger operating to maintain the battery. However, periodic maintenance and inspection is recommended, this should include the battery condition.

If vehicle is being stored not connected to 230v Mains Hook-up:

- Charge the leisure battery for 24 hours prior to placing motorhome in storage.
- Ensure the isolation button on PSU is in the 'OFF' position.
- Disconnect the negative terminal of the leisure battery or batteries.
- The battery should not be adversely affected by winter temperatures but the level of charge should be maintained to maximise the life span of the battery. This can be achieved using an automotive type battery charger as and when required.
- Disconnect the vehicle battery negative terminal. Check the charge of the battery every three months. (See Vehicle Inactivity section in the Fiat handbook).

Gas system

- Ensure the gas supply is isolated at the gas bottle, and ensure that the gas manifold taps are off.
- Check the age and condition of the high pressure gas hose and regulator, and replace if required.

Appliances

Check the battery expiry date on the smoke alarm and CO detector and replace or remove as required.

- Ensure the fridge is turned off.
- Clean the inside of the fridge.
- Prop the fridge door open, and if possible, the internal freezer compartment door for ventilation.
- Fit fridge vent winter covers (if available).
- Ensure all hob / oven / microwave surfaces are clean.
- If the motorhome is going to be left connected to 230v supply while not in use, ensure the microwave is unplugged.
- Clean the toilet and empty the cassette and lubricate the seals with an acid free lubricant such as Thetford High Grade Seal Lubricant. See Thetford toilet Users manual

Exterior (Body / Chassis)

- Ensure that all windows, skylights and access doors are closed and secured.
- Ensure all fixed ventilation points (high and low) are clear from debris and obstructions.
- Ensure the vehicle is not parked where falling debris (i.e. leaves, tree sap) could cause damage.
- Avoid leaving the vehicle parked in soft ground, long grass or a potential area where standing water may form.
- Lubricate relevant points on the chassis.

Wheels and Tyres

- Do not store in one position with partially deflated tyres. The tyre walls will suffer and do present a real danger of blow outs, especially when travelling at faster speeds than are allowed in the UK. The wheels should be turned every couple of weeks. If you are removing the wheels, follow the jacking procedure for changing a wheel. Check your tyres regularly for signs of age and deterioration, particularly wear, cracking and blistering. If in doubt consult a reputable tyre fitter.

WINTERISATION/STORAGE

- A purpose made cover maybe used, but please ensure the cover is a good fit, breathable and securely fitted.

Note: A poorly fitted cover can rub and damage the bodywork. Non-breathable covers will encourage mould to grow.

Interior (Furniture / furnishings)

- Open all lockers and internal doors, to ensure good circulation.
- Remove cushions and store them in a dry location or ensure all cushions are placed in a well ventilated area.
- Close all blinds and curtains. Customers are reminded to check the tension on blinds after storage if left closed for long periods.
- Thoroughly ventilate the motorhome by opening doors or windows periodically.
- Placing water absorbent crystals in the van during the winter months, will help reduce moisture levels and mould growth.
- We do not recommend leaving portable heaters in the van unattended.

Recomissioning the Water System

Re-connect the water pump by positioning the pipe connectors into the pump housing and pushing the blue tabs into position. It is advisable, after a period on non-use, to flush the water system with a sterilising fluid such as Milton 2. Fill the fresh water tank with water and sterilising fluid (Refer to sterilising fluid instructions for the amount to use). Turn the pump on and open all the taps, ensuring that the water drains away safely to the waste tank. When the waste tank is full empty the fluid into a designated waste water area. Re-fill the tank with fresh water and flush through the system as described above; repeat this until all traces of the sterilising fluid have been flushed out. (See "priming the Water System" and "Waste Tank" sections on page 48/49)

Prepare the toilet system by adding water and Thetford fluid to the toilet waste tank. See "Preparing the Thetford Cassette Toilet for Use" on pages 119 + 123.

Appliances

Before starting motor caravanning after storage, check all gas appliances and electrical points.

Note: Preferably not less than once a year, the electrical installation should be inspected and tested by a qualified electrician.

After storage it is advisable to air the Motorhome and clean throughout, especially cooking appliances and the refrigerator.

Replace the bedding if they were removed for storage.

⚠ WARNING: Always follow the manufacturers recommended procedures after use of fitted equipment in the Motorhome, before storing for any length of time.

General care

For care of the vehicle battery please refer to the Fiat handbook in section 'Trouble Shooting'.

All moving parts should be checked for free operation.

Clean all cooking appliances and refrigerator. Lubrication should be carried out at the points illustrated in the general notes on chassis maintenance.

Charge up the on-board battery every 2 months.

Leave the refrigerator door open. Leave furniture doors and lockers open to allow air to circulate fully.

Modifications - DIY work

Owners need to be aware that carrying out DIY modifications to your motorhome may in certain instances, invalidate the warranty cover and could also affect the safety and structure of the vehicle.

⚠ WARNING: WD40 is not recommended for external or internal use

WD40 attacks paintwork and sealants.

If a lubricant is required for Interior hinges, Sliding door tracks, Bottle box hinges, Exterior door hinges, Plastic tracking etc. We recommend "Ambersil 40+" this is readily available from most DIY/Automotive retailers including Halford's .

Before carrying out any DIY work within the warranty period, please check with your nearest dealer or contact Supercare customer services on 01482 875740 for advice.

Paintwork

Proper care involves washing the motorhome regularly with a mild detergent rinsing with cold water and leathering off. A good quality, similar coloured car wax may also be applied which will make washing even easier.

Please note: Do not use abrasive-cleaning agents, on the exterior of your motorhome. Stubborn stains may be removed using a soft cloth and mild detergent.

⚠ WARNING: Overzealous use of detergents may loosen the decals and / or badges.

Acrylic Windows

The windows in your motorhome are fully double glazed and, with care, will remain sparkling and scratch free.

Acrylic (Plastic) Window Condensation

Unlike domestic double glazed windows, your caravan / Motorhomes window are not vacuum sealed instead the double panes of acrylic plastic with are fitted with a breathable plug on the inner pane.

It is possible, in weather where extremes in temperatures occur between night and day, that customer will notice condensation between the panes. The same phenomenon may also occur when washing your vehicle on a hot day.

The condensation should clear itself when the ambient conditions return to normal and the air between the panes dries. However, if this is taking a longer time than required, the breathable plug (normally located in the top

corner of the window) can be removed, with a pin or sharp object, and replaced when the panes are dry. Care should be taken when doing this.

Acrylic (Plastic) Window Cleaning

The material used to produce most caravan and Motorhome windows is acrylic plastic. While the acrylic used is very durable, it is able to be scratched with relative ease and therefore, care must be taken when clearing your vehicle not to use aggressive clearing products. Equally, care should be taken when using a drying cloth that it is clean and free from grit.

Keeping Your Acrylic Windows Sparkling

For small scratches, it is possible to use a liquid metal polish or a proprietary acrylic polish of a suitable grade dependant on the severity of the scratches.

Cleaning Windows

Wash down as you would your car. Do not use a sponge on dirty windows. When all the dirt has been removed, dry with a leather or similar type of cloth. The catches and stays do not require lubricating.

Removing Tar

Use a proprietary tar remover on your double glazed windows; (available from most leading car accessory or do-it-yourself shops). Do not use petrol or other chemicals.

Note: The use of a pressure washer on the exterior of your motorhome is not recommended as this may damage the transfers.

Condensation**What is condensation**

Condensation is the process of change of water from its gaseous form (water vapour) into liquid water when it comes into contact with a surface that is cold. Condensation generally occurs when warm air cools quickly and loses its capacity to hold water vapour, and as a result water vapour condenses to form droplets.

Why condensation occurs

Condensation occurs when warm moist air meets a cold surface. The level of condensation will depend upon humidity levels, how moist the air is and how cold the surfaces are they come into contact with.

If the temperature falls below the dew point temperature, it is quite normal for condensation to occur on any material within the motorhome that is cold, for example the external walls, plastic windows etc.

When condensation occurs

Condensation occurs usually in winter months, because ambient temperatures are colder (leading to cold surfaces) and windows and roof vents are opened less so the moist air cannot escape.

Where condensation occurs

Condensation will occur where warm moist air is put into the atmosphere in areas such as in bathrooms (during showering) and in kitchen areas (during cooking).

In the enclosed space of a motorhome, the moist air from the kitchen or bathroom areas will inevitably transfer to the rest of the vehicle, which in turn condenses on cold surfaces leading to visible water droplets. This issue is compounded by warm moist air being generated from normal breathing.

Condensation will also form in cold areas where air movement and ventilation is restricted (e.g. cupboards, wardrobes, under beds, etc.)

What is important

It is important to provide ventilation and air flow, so that warm moist air can escape, or be externally cooled, and to use the heating reasonably by not making the motorhome too warm such that people perspire, as this will only serve to generate more moist air and therefore more condensation.

However, in particularly cold periods, where the external ambient temperatures are low, condensation may still form on external walls as the insulation levels may well not be thermally able to cope with the difference between the internal and external temperatures.

How can you prevent condensation

Provide ventilation so that moist air can escape.

- a. Good ventilation of the vehicle when cooking or when drying clothes, footwear or pets is essential. Observe when windows begin to show signs of misting and increase ventilation by opening a window slightly by 1 cm or opening a roof vent, as these will help, but keep the habitation door closed as much as possible to retain heat.
- b. If drying damp clothes or towels, open a window to ventilate the area and allow the moist air to escape.
- c. Try to make sure that the caravan is partially heated. It can take a long time for a cold caravan to warm up, so it is better to have a small amount of heat for a long period than a lot of heat for a short time.
- d. After showering, keep the bathroom window or skylights open, and shut the bathroom door long enough to dry off the room.
- e. Fixed ventilation is provided in the vehicle, specifically through high level vents within the skylights and low level vents through the floor, it is important not to block these.
- f. Electrical heating is dryer than gas heating, and introduces less moisture into the atmosphere. Do not use additional portable paraffin or flue-less gas heaters at all.
- g. If left unoccupied and unheated for long periods of time the temperatures can soak down thermally into the entire product and become very cold. Whenever possible, put the heating on at a low level before use by pre heating in cold weather.

h. Even with reasonable ventilation it is likely if the temperature is less than 5°C and the humidity is high that condensation will occur. Ideally the temperature should be kept about 20°C when occupied.

Mould Growth

Any sign of mould growth is an indication of the presence of moisture and if caused by condensation gives warning that heating or ventilation may require improving.

New vehicles

New products take a long time before they are fully 'dried out' because of the moisture in the materials used during manufacture. While this is happening extra heat and ventilation will be required.

Changing Exterior Bulbs

ALWAYS REPLACE LIKE FOR LIKE

For individual replacement bulb specification, refer to your Specification and base vehicle Handbook.

Generally road lighting bulbs can be easily replaced by unscrewing and removing the lens from the exterior of the caravan or motorhome.

Interior

Follow these guidelines to ensure your investment is receiving the very best attention.

Side Walls, Roof Lining

A simple wipe over with a damp cloth and a very mild detergent is all that is needed.

Soft Furnishings

Should be vacuumed occasionally to remove grit and sand and help to keep its smart appearance and ensure long life. The upholstery can be cleaned with a mild, reputable upholstery cleaner. It is recommended that the curtains and pelmets are specialist cleaned only. The foam used in cushions are manufactured to meet fire regulations. It requires time to return to its normal position after prolonged use.

Clean and dust the upholstery and if possible remove before placing the Motorhome into winter storage. Alternatively, stand the

cushions on their edges to allow circulation of air. This will reduce the possibility of dampness from condensation. Keep curtains or blinds closed, to minimise fading of furniture.

If the blinds and/or flyscreens remain down for a prolonged period of time, re-tensioning of the springs will be necessary before re-use.

Leather furniture

Leather furniture, if fitted in your vehicle, requires little maintenance. Regular care of leather does ensure its lasting quality and some general rules for regular cleaning and maintenance are:

- Clean the leather with a soft damp cloth taking care not to soak the leather
- For a more thorough clean, use the Bridge of Weir Leather cleaning and protection kit available directly from the distribution centre
- Do not use saddle soap, wax polishes or spray polishes
- Do not use any product or any method of cleaning not recommended by the manufacturer
- Avoid letting buckles, studs and zips come into any direct contact with the furniture
- Avoid drying out the leather by taking extra care where there is heating or blown air outlets

Note: The above cleaning instructions do not apply to nubuck suede or any other uncoated leather. For further advice on care and maintenance please contact the tannery or its representative.

INTERIOR CARE

Work Surfaces

You should not stand very hot items on any of the work surfaces.

Cupboard Catches

It is advisable to lightly oil all cupboard catches, sliding bolts and hinges from time to time.

Bathroom, Shower Room and Kitchen Equipment

All the Thermoplastic parts in these areas have easy clean surfaces. To ensure long life and prevent damage you must not use any cleaning materials at all and ensure water temperatures do not exceed 70°C, (putting cold water in first is suggested). After every use, it is essential that you rinse with clean water only and wipe with a soft damp cloth.

Failure to follow these simple instructions may result in premature failure or cracking which will not be covered by any guarantees (including extended warranties).

Furniture

A simple wipe over with a damp cloth should be all that is required. Polishing with a proprietary brand of wax polish enhances and maintains furniture in showroom condition.

It must be remembered that because the frames of some doors are made of ash, which is a natural product, they can be affected by temperature and humidity and may bow under certain conditions. As conditions change they should revert to their original positions.

Kitchen Drainer and Cutting Board

You should not stand hot items on to these items. To wash use only warm soapy water, do not use chemicals and bleach.

Changing Interior Bulbs

Remove the lens or lamp shade to access the bulb.

ALWAYS REPLACE LIKE FOR LIKE

For individual replacement bulb specification, refer to your Specification Handbook.

Bulb Replacement and Type

Full details of the bulbs used with your Swift Group product can be found in your Technical Handbook. Details of how to change the various bulbs can be found within our Practical Guides, located on Swift Talk (<http://www.swift-talk.co.uk/forum/topics/swift-group-practical-manuals>)

FORTE DOUBLE BED MAKE UP INSTRUCTIONS

Forte double bed make up instructions

Step 1

Use the release catch on the seat side and pull the seat base out, complete with cushion. The base cushion will drop down and rest on the pull out.



Step 2

Lift the kitchen work top and remove the infill cushion for the seat base. Note: This cushion does not have rails on the underside. Place on the seat base.



Step 3

Remove the other 2 cushion make up pieces from the kitchen storage and slide out the support leg from the base of the storage area.



Step 4

Select the cushion make up piece with the tabs on the metal rails. Position the cushion on the slide out leg ensuring that metal rail sits between the nylon spacers on the slide out leg. The opposite side will sit on the Forward facing seat pullout.



FORTE DOUBLE BED MAKE UP INSTRUCTIONS



Step 5

The final make up piece rests on the side of the forward seat and a metal bracket in the kitchen storage compartment.



Caring for the environment

After many years of service you may decide that your motorhome has become beyond economic repair and should be disposed of. Please ensure that you comply with the end of life vehicle legislation and take it to an authorised treatment facility where it will be properly dealt with to minimise any negative environmental impact. The transaction will be logged at the DVLA, identifying that you are no longer the owner of the vehicle.

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OWNERS CLUB & AFTERCARE

Owners club

The Owners Club is a completely independent organisation run for the benefit of the motorhome owners. They have numerous rallies during the year in various parts of the country. Apart from the friendliness and companionship the Club generate it is also actively engaged in charity work for those less fortunate than ourselves. The address of the Secretary of the Owner Club can be obtained from the Swift Group website.

Spare parts and after sales customer service

A catalogue of spare parts are available through our Swift Group Dealer Network, from door catches through to spare wheels. Please note, all parts enquiries must be directed through your dealer, as the Swift Group does not operate a direct retail service.

We endeavour to supply parts for vehicles up to 8 years old. If the original part is no longer available your dealer should be able to source a suitable alternative.

Note: Please remember to quote chassis VIN (Vehicle Identification Number) when ordering any items from your dealer. This can be found at the bottom of the front windscreen, on the plate on the front cross member within the engine compartment and on the Swift manufacturers plate situated on the forward edge of the side sliding door.

Repair Facilities

Should you be unfortunate to encounter damage to your vehicle, we have a number of approved workshops and dealerships with workshop facilities to undertake such repairs. Details of which can be found via our website: www.swiftgroup.co.uk/find-a-dealer

The enjoyment of your motorhome can be greatly enhanced by membership of one or more of the various caravanning, motoring and holiday clubs. Here are some useful addresses:

Caravan Clubs

The Caravan Club,
East Grinstead House,
East Grinstead
West Sussex, RH19 IUA

Tel: 01342 326944
www.caravanclub.co.uk

The Camping and Caravanning Club,

Greenfields House,
Westwood Way,
Coventry,
West Midlands.
CV4 8JX

Tel: 0845 130 7631
or: 024 7647 5448
www.campingandcaravanningclub.co.uk

Motoring Associations

Automobile Association (AA)

Fanum House,
Basinstoke,
Hants, RG1 2 EA
Tel: 08705 448866
www.theaa.co.uk
e-mail: customer.services@theaa.com

RAC Motoring Services

8 Surrey Street
Norwich
Norfolk
NR1 3 NG
www.rac.co.uk
01922 437000

Green Flag

Tel: 0845 246 1557
www.greenflag.com

RBS Insurance

Churchill Court
Westmoreland Road
Bromley
Kent
BR1 1DP
0800 158 2493

Trade association

NCC

Catherine House,
Victoria Road,
Aldershot,
Hampshire, GU11 1SS
Tel: 01252 318251
www.thencc.org.uk
www.motorhomeinfo.co.uk

The Society of Motor Manufacturers and Traders Limited (SMT)

Forbes House,
Halkin Street,
London SW1X 7DS
Tel: 020 7235 7000
www.smmt.co.uk

Swift Group Limited

Dunswell Road, Cottingham, East Yorkshire,
HU16 4JX
Tel: 01482 875740
email: enquiry@swiftgroup.co.uk
website: www.swiftgroup.co.uk

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Change of ownership

Notification of change of ownership

As the new second hand owner, please notify the Swift Group of the change of ownership by completing this page and sending it to:

Customer Services
Swift Group Limited,
Dunswell Road,
Cottingham,
East Yorkshire HU16 4JX.

Note: Warranties are only transferable providing the terms and conditions of the warranty have been met by the previous owner(s). Please see warranty information at the beginning of this handbook for full details.

CHANGE OF OWNERSHIP

<p>DETAILS OF MOTORHOME:</p> <p>NEW OWNER:</p>	Model:	
	Chassis No:	
	Name:	
	Address:	
	Email:	
	Telephone:	
	Mobile:	
	Date of purchase:	
<p>PREVIOUS OWNER:</p>	Name:	
	Address:	
	Email:	
	Telephone:	
	Mobile:	
	Date of purchase:	

