

Swift Motorhomes
Owner's Handbook



Wherever you want to go, we're right behind you.

Congratulations. You couldn't have made a better choice than a Swift motorhome.

And when it comes to buying a new motorhome or car, Black Horse are the finance experts.

With a range of finance options to suit you, and a wealth of experience, you can relax in the knowledge that Swift and Black Horse are right behind you wherever you want to go.



blackhorse
CARAVAN FINANCE

Credit is available to persons aged 18 or over. Guarantors may be required. Written quotations available on request from:
Black Horse Caravan Finance, 24 - 26 Newport Road, Cardiff CF24 0SR Tel: 029 2029 6863

INTRODUCTION

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.

HAPPY TOURING!

IMPORTANT - PLEASE QUOTE THE BODY BUILD NUMBER & BASE VEHICLE CHASSIS NUMBER IN ALL CORRESPONDENCE WITH YOUR DEALER OR SWIFT GROUP LIMITED.

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.

CONTENTS

The Motorhome Code.....	1
Preparing for the Road.....	5
‘En Route’	9
Safety & Security.....	11
Arrival at Site	13
Connecting Services.....	15
Electrical Systems	27
Equipment Details.....	43
Motorhome Care	83
Useful Information	89
Index.....	94

THE MOTORHOME CODE

Code of Conduct	2
The Country Code	4
The Coastal Code	4

Motorhome Code

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 napkins 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 ISO 7165, 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.

Motorhome Code

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

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.

When the vehicle is in motion it is compulsory for all front seat passengers to wear seat belts and strongly recommended for rear seated passengers, where fitted.

Before moving off, elevated roofs 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 being refuelled, or on a ferry, all gas systems must be turned off.

HANDBOOK

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

ENVIRONMENT

Care and consideration should be taken to protect the environment.

Observe the Country and Coastal Codes shown overleaf.

Motorhome Code

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 hard to put out.

REMEMBER: FIRE SPREADS QUICKLY.

2. Keep to the public paths across farmland.
3. Use gates and stiles to cross fences, hedges and walls.
4. Leave livestock, crops and machinery alone. View from a distance.
5. Take your litter home - it is unsightly and harmful to wildlife.
6. Help to keep all water clean.
7. Take special care on country roads.
8. Make no unnecessary noise. Most animals are very timid; noises can disturb them unnecessarily. If you want to get the best out of the country, go quietly.

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.

Disturbance may mean DEATH.

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.

When sailing, moderate your speed - the wash from a fast boat can destroy banks and nests.

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.

PREPARING FOR THE ROAD

Before Moving Off	6
Loading of Vehicle	6
User Payload Allowance	6
Maximum Technically Permissible Laden Mass	6
Roof Loading	7
Tyres	7
Three Point Seat Belts	7

Preparing for the Road

BEFORE MOVING OFF

Check:

- gas cylinders and all gas operated appliances have been isolated, including fridge, water heater, oven and space heater.
- gas cylinders are correctly positioned, secured and turned off.
- loose articles are stowed securely. Do not stow tins, bottles or heavy items in overhead lockers.
- all lockers and cupboard doors are closed and secured.
- all bunks and ladders are secure in their storage or place Luton ladder on its side in front of Luton bedboards.
- all rooflights are closed and secured.
- main table is stored in its transit position.
- fridge is on 12V operation and door lock is set.
- battery selection switch is in the OFF position.
- tyre pressures and wheel nuts.
- rear corner steadies are raised.
- all drain taps are closed.
- exterior roof rack ladder is raised and secured.

- 230V mains input socket flap is securely closed.
- exterior step (where fitted) is retracted/folded in

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

LOADING OF VEHICLE

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, (M.T.P.L.M.), it is important to remember that the front and rear axles also have individual maximum weights which must not be exceeded.

These weights, together with the M.T.P.L.M., can be found on the chassis manufacturer, the Swift Group or Al-Ko plates affixed to your vehicle under the front edge of the bonnet.

WARNING: Isolate all gas appliances before moving off.

USER PAYLOAD ALLOWANCE

The User Payload (the weight of additional items such as personal effects, essential habitation equipment and optional equipment, etc.) is calculated by deducting the Mass in Running Order (manufacturer's standard vehicle specification weight) from the Maximum Technically Permissible Laden Mass (manufacturer's maximum authorised weight).

NOTICE:

Please ensure you have allowed for the masses of all the items you intend to carry in your motorhome.

MAXIMUM TECHNICALLY PERMISSIBLE LADEN MASS

This is the maximum legally allowable weight of the vehicle, fully laden, on the road.

See Specification pages for specific model weights.

ROOF LOADING

A maximum load of 200kgs can be evenly distributed over the roof area. This figure **MUST NOT** be exceeded.

The roof areas, up to the over cab section, are capable of withstanding an average person's weight (13 stone or 82.5kg).

Note: Do not walk on the over cab section.

Some motorhome roofs can be fitted with a roof rack (optional).

It is permitted to stand inside the roof rack fitted to the roof. The roof section beyond the rack is not designed for walking on.

Note: When loading the roof rack, make sure the load is spread evenly and do not allow sharp objects to come into contact with the roof surface.

WARNING: When walking on the roof rack, deck type shoes should be worn - not leather soles.

Do not apply excessive load to the rear suspension of your motorhome or allow the vehicle to reverse with the roof rack access ladder in the down position, touching the ground. This may cause excessive strain on the ladder fixing points.

TYRES

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 door aperture.

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.
- It is important to wear the belt on each journey.
- The belt is suitable for restraining most child seats and boosters.

- It is not intended for children under 6 years of age unless used with other approved restraints.
- 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.

'EN ROUTE'

Spare Wheel Removal 10

'En Route'

REMOVAL OF SPARE WHEEL:

Caution: Exercise care when lowering the wheel and frame due to its weight.

Removal

- a) Spare wheel in the stowed position (Fig. 1).
- b) Remove the securing pins (a) from the supports (b) at each side of the spare wheel carrier frame (c) (Fig. 2).
- c) Lift the wheel carrier frame (c) slightly and move the frame supports (b) forward and clear of the carrier frame (Fig. 3).
- d) Lower the carrier frame and wheel to the ground (Fig. 4).
- e) Remove the spare wheel.

Replacement

Replacement is a reversal of the removal procedure.

Ensure the securing pins (a) are correctly located in the frame supports (b).

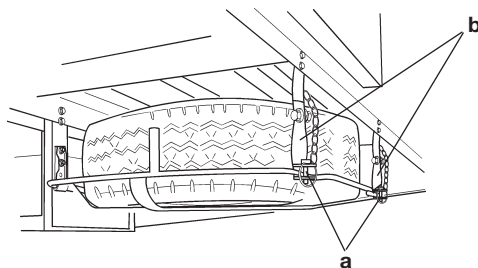


Fig.1

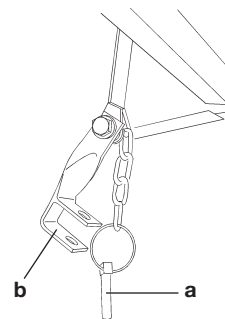


Fig.2

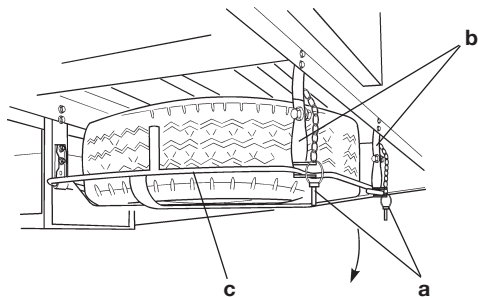


Fig.3

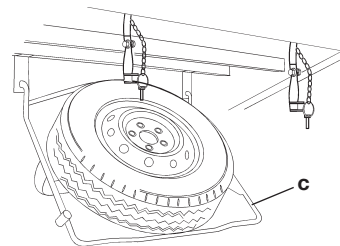


Fig.4

**SAFETY &
SECURITY**

In Case of Fire 12

Ventilation 12

Security 12

Safety & Security

IMPORTANT: Your attention is drawn to the notice affixed in your motorhome advising you on fire prevention, ventilation and what to do in case of a fire.

FIRE

In case of fire

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

Fire Extinguishers

It is recommended that a 1kg (2lb) minimum capacity dry powder fire extinguisher complying with the requirements of ISO 7165 be carried inside your motorhome at all times and a fire blanket be kept next to the cooker.

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

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, drugs, etc.

Escape Paths

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

VENTILATION

All motorhomes are built to EN 721. The ventilation points on your motorhome are fixed points of ventilation which are stated by this standard. Under no circumstances must these vents be blocked or obstructed.

All ventilation levels are calculated to suit each models requirements. There should be no modifications made which may result in reduced ventilation levels.

Ventilation is provided at low level by vents fitted either to the furniture or in the entrance step, and at high level by the roof lights.

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

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.

NEVER allow modification of electrical or LPG systems and appliances except by qualified tradesmen at a Swift Group Dealer

In the interests of safety, replacement parts for an appliance should conform to the appliance manufacturer's specification and should be fitted by them or their authorised agent.

Additional night time ventilation is obtained

on some windows by releasing the window catches and placing them in the second groove. Note the windows are not sealed from rain in this position.

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.

Chassis number

Record your motorhome chassis number, which can be found under the bonnet, and the body conversion serial number.

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

Additional security

Window etching of the chassis number is a cost effective deterrent.

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.

ARRIVAL AT SITE

Positioning the Motorhome	14
--	-----------

Arrival at Site

Note: Check and observe site regulations.

POSITIONING THE MOTORHOME

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 motorcaravan 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 (Fig. B) or proprietary ramps are ideal for this purpose.

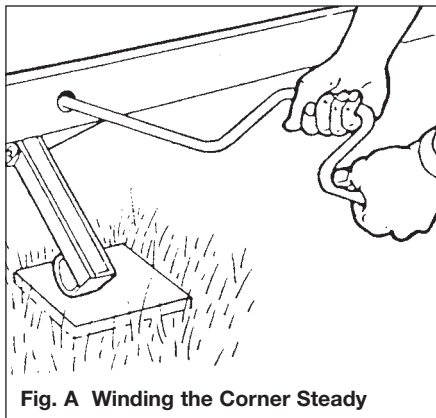


Fig. A Winding the Corner Steady

Lower the rear corner steadies (if fitted) until they are in firm contact with the ground (Fig. A). DO NOT use the steadies as a jack, they are only a means of stabilising the rear of the motorhome. Levelling pads or boards should be used under the steadies where the ground is soft or uneven.

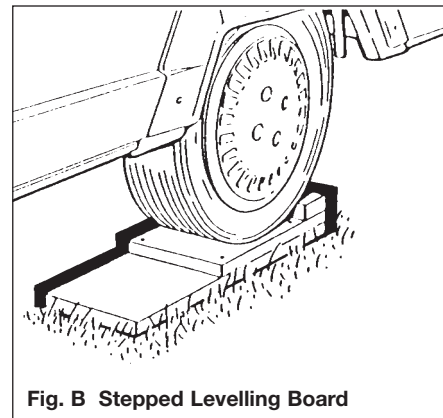


Fig. B Stepped Levelling Board

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.

CONNECTING SERVICES

Mains Socket/Water Connection	16
Water System	16
Guidance on Cleaning	18
Gas	19
Types of Gas	20
Safety Advice	21
Electricity	22
Overseas Connection	23
Wiring Diagram	24
230V Mains Electrical Equipment Consumption	25
Thermal Insulation and Heating	25

Connecting Services

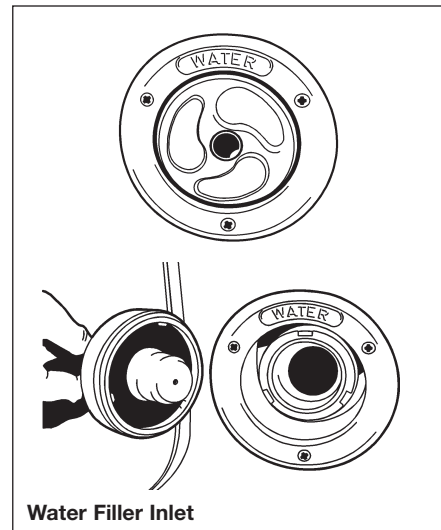
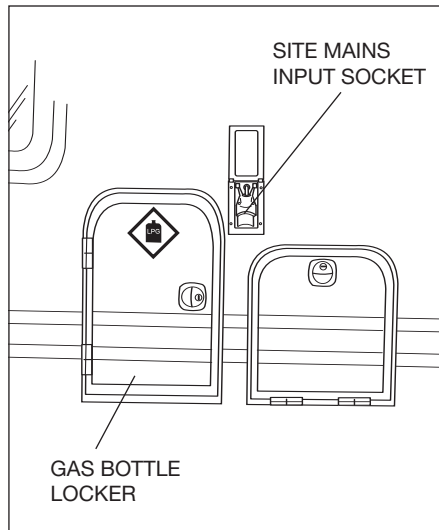
Connection of services are dealt with under separate headings. In all cases become familiar with manufacturers' instructions.

Before making connections of any description to the motorhome ensure ALL equipment is turned off.

WATER SYSTEM

Fresh water system

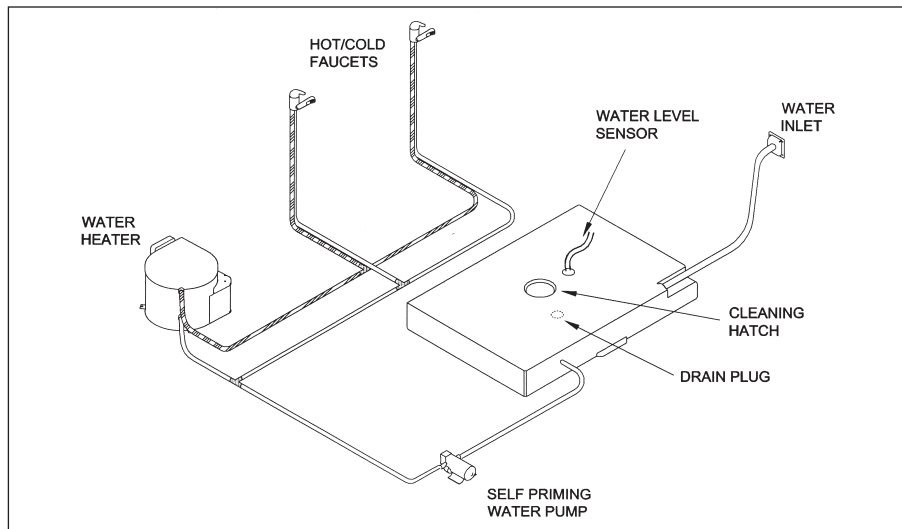
- (i) All fittings, including the holding tank, water pipes, taps and connections are of food quality material (to BS6920) and therefore, should not affect the quality of the water used. It is recommended however, that the system is flushed through twice before it is used for the first time, and always cleaned/flushed after it has stood unused for a period of time (eg over the winter period). Care has been taken (using smooth bore pipes etc) to eliminate as many water traps as possible.
- (ii) 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 hosepipe or water carrier, that it is also made from non-toxic materials (preferably food quality material).
- (iii) The fresh water tank may be drained via a plug in the base of the tank, accessible via the cleaning hatch.
- (iv) The fresh water system is pressurised by a pump which will continue to operate until it senses a pre-set pressure in the system.



WARNING:

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.

Connecting Services



Waste water system

- (i) The waste water holding tank is secured underneath the chassis of your motorhome and is gravity fed.
- (ii) In order to eliminate, as much as possible, unpleasant odours, only smooth bore pipes are used. These are fitted with waste traps under the floor which should be cleaned periodically by unscrewing the lid and flushing with clean water. However, should the

waste water tank be overfilled, then 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 (iii).

- (iii) The waste water gauge shows when the tank is full, not progressively and it is, therefore, recommended that the waste water tank is emptied on a daily basis. This is done by opening the valve located just beneath the side or rear

panel on the exterior of the motorhome. It should be emptied either directly, or via a waste water container (not supplied) into a designated waste water area.

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 two gallons of water to fill it. To do this open all hot water taps (except shower) until water comes from the taps. Top up fresh water tank after priming the water system.

Please ensure all taps are fully turned off when not in use.

We recommend the use of Milton 2 sterilising fluid for cleaning and sterilising the water tank and system.

An explanatory leaflet is available from:
The Milton Food Hygiene Advisory Service,
Whitehall Lane, Egham, Surrey, TW20 9NW.

Connecting Services

GUIDANCE ON CLEANING PORTABLE WATER TANKS AND THE WATER SYSTEM IN MOTORHOMES

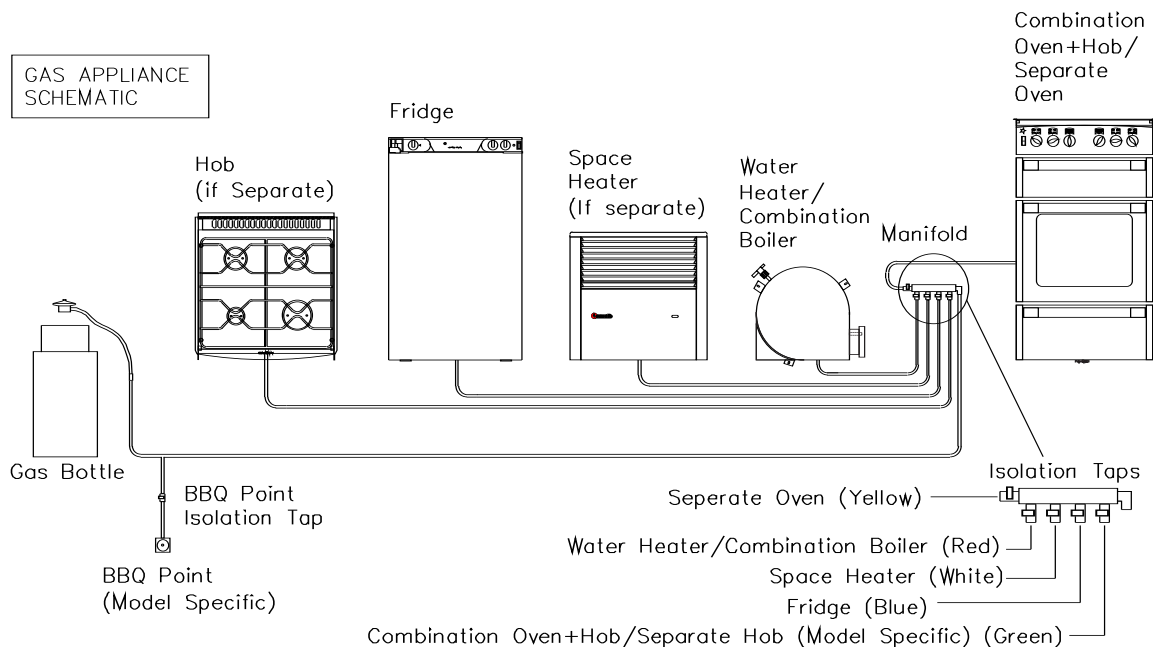
The water systems, and in particular storage tanks, in motorhomes are susceptible to contamination by bacteria if care is not taken with their use and cleaning. The symptoms caused by bacterial contamination are not purely limited to gastro-intestinal diseases, but may also manifest themselves as ear, 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 (e.g. Milton for 15 minutes).

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.

Connecting Services



NOTE : The above illustration is for representation purposes only.
Appliances fitted to your vehicle may differ from those shown above.

Gas schematic drawing

Connecting Services

GAS

GENERAL INFORMATION

Gas Bottles

Bottled Liquidified Petroleum Gas (L.P.G.) is the most convenient portable source of fuel for your motorhome.

Make sure that heating, cooking appliances and gas cylinders are switched off before you move the motorhome.

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 gas bottle locker on your motorhome is designed to accommodate 4.5kg, 7kg or 15kg Butane or 6kg or 13kg Propane cylinders. Refer to your Service Handbook for specific gas bottle size recommendations.

The regulator

The regulator (Fig. A) is a governing device which adapts the bottle pressure to one that suits the equipment in the motorhome.

WARNING: Some industrial LPG appliances operate at high pressure and require a 'high pressure' regulator. This often has an adjusting handle on it. NEVER use such a regulator on a motorhome.

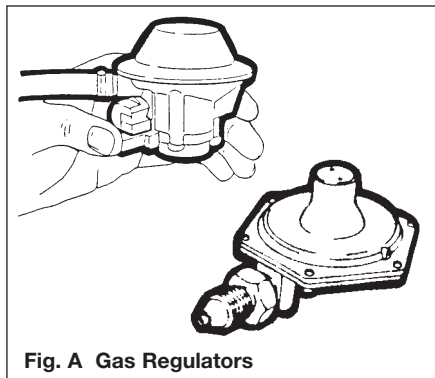


Fig. A Gas Regulators

Note: Regulator valves should always be turned to the "OFF" position whilst the motorhome is being driven.

Propane and Butane gas regulators are not interchangeable.

Hoses

Hoses should be made from Neoprene and should conform to BS 3212. Rubber hosing should never be used. It is good practice to replace hoses annually and in any case no later than the expiration date marked on the hose. An approved hose clip is a worthwhile addition to prevent accidental removal of the hose.

TYPES OF GAS

Butane

Butane is supplied in the U.K. in green, blue or aluminium bottles.

All these have a male left hand thread EXCEPT for Camping Gaz which has a special female right hand thread and Calor, 4.5kg, 7kg & 15kg, aluminium and 33lb/15kg bottles which have a special clip-on connection.

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

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

Propane

Propane is supplied in red, or partly red bottles 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 motor caravanning.

GAS SAFETY ADVICE

Facts about LPG

LPG is not poisonous.

Bi-products are harmless.

There is danger if all air and oxygen are 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.

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 extreme cases 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.

PRECAUTIONS

- a) 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.

- b) Avoid naked lights when connecting or changing a cylinder.
- c) Check the flexible hose frequently.
- d) Gas is heavier than air and therefore sinks to the lowest point.
- e) Keep bottle gas containers outside (and protected against frost). If they must be kept inside make sure they are well away from heat.

WARNING: If you smell gas or suspect a leak 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 the vehicle. Seek professional advice as to the cause of the leak.

WARNING: Inspect flexible gas hose regularly for deterioration and renew as necessary, with the approved type, in any case not later than the expiry date marked on the hose. Flexible gas hose length should not exceed 400mm.

Ventilation

Vents should not be obstructed in any manner as this could lead to insufficient fresh air. In this case the confined

Connecting Services

atmosphere becomes depleted of oxygen which leads to the formation of the highly poisonous gas 'carbon monoxide'. Carbon Monoxide is odourless, colourless and tasteless and will rapidly cause unconsciousness and death with little or no warning prior to collapse.

THERE IS NO DANGER WHEN ADEQUATE VENTILATION IS PROVIDED.

Roof-mounted 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.

Connection

Ensure that the gas regulator is correctly connected to the gas cylinder in the gas bottle compartment and that the hose is tight. Before turning on the gas supply, ensure that all gas operated equipment in the motorhome is turned off.

Gas Tap Colours

All gas equipment is supplied through a gas manifold system which has individual isolation taps for each appliance as follows:

Red	-	Water Heater
White	-	Space Heater
Green	-	Hob & Oven (combination)
Green	-	Hob (separate)
Yellow	-	Oven (separate)
Blue	-	Fridge

Connecting Services

ELECTRICITY

As with electricity in the home, care must be exercised when handling mains electricity.

Your attention is drawn to the following notice as laid down by the Institute of Electrical Engineers.

INSTRUCTIONS FOR ELECTRICITY SUPPLY

On arrival at site

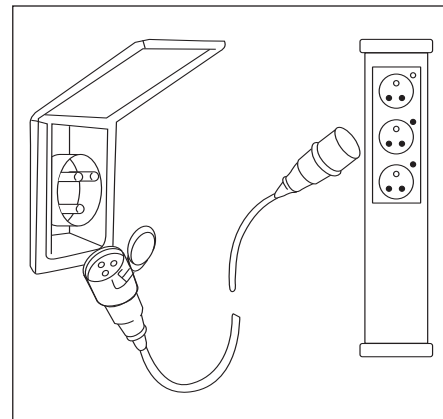
1. Before connecting the motorhome installation to the mains supply, check that:
 - (a) the mains supply is suitable for your installation and appliances, i.e. whether it is a.c. or d.c. and whether it is at the correct voltage and frequency, and
 - (b) your installation will be properly earthed. Never accept a supply from a socket outlet or plug having only two pins, or from a lighting outlet.
 - (c) any residual current device (earth leakage circuit breaker) in the mains supply to the motorhome has been tested within the last month.

In case of doubt, consult the site owner or his agent.

2. MAKE SURE THAT THE SWITCH AT THE SITE SUPPLY POINT IS OFF.
3. Lift the cover of the electricity inlet provided on the motorhome, and insert the connector of the supply flexible cable.
4. Remove any cover from the socket outlet provided at the site supply point, and connect the plug at the other end of the supply flexible cable to this. Switch on the main switch at the site supply point.

On leaving site

5. Switch off the main switch at the site supply point and remove the flexible cable connector replacing any cover fitted.
6. Disconnect the flexible cable from the motorhome.



IT IS IMPORTANT THAT THE MAIN SWITCH AT THE SITE SUPPLY POINT SHOULD BE SWITCHED OFF, THE SUPPLY FLEXIBLE CABLE DISCONNECTED, AND ANY COVER REPLACED ON THE SOCKET OUTLET AT THE SITE SUPPLY POINT BEFORE DISCONNECTING THE FLEXIBLE CABLE FROM THE MOTORHOME. IT IS DANGEROUS TO LEAVE THE SUPPLY SOCKET OR SUPPLY FLEXIBLE CABLE LIVE.

For motorhomes that are generally left unused for long periods in the open it is strongly advised that the mains installation is inspected periodically to ensure that it is safe to use. The IEE Wiring Regulations recommend that mains installations in motorhomes are re-inspected every 3 years. An annual inspection by a qualified person is recommended (see list below) who should sign and issue a periodic inspection report.

Suitably qualified persons acceptable to the SMMT/NCC to sign and issue Inspection and Completion Certificates should be one of the following:

- An approved contractor of the National Inspection Council for Electrical Installation Contracting* or
- A member of the Electrical Contractors' Association of Scotland
- A qualified person acting on behalf of the above (in which event it should be stated for whom he is acting).
- The names and addresses of Approved Contractors in any locality (there are over 10,500 in the UK) can be obtained from Electricity Shops, or direct from:

NICEIC
Vintage House
37 Albert Embankment
London SE1 7UJ
Telephone: 0207 564 2323

The names and addresses of members of the Electrical Contractors' Associations can be obtained direct from:

ECA
Esca House
Palace Court
London W2 4HY
Telephone: 0207 313 4800

ECA of Scotland
23 Heriot Row
Edinburgh EH3 6EW
Telephone: 0131 225 7221

IN CASE OF DIFFICULTY CONSULT AN APPROVED ELECTRICAL INSTALLATION CONTRACTOR (WHO MAY BE THE LOCAL ELECTRICITY COMPANY). IT IS DANGEROUS TO ATTEMPT MODIFICATIONS AND ADDITIONS YOURSELF. LAMPHOLDER-PLUGS (BAYONET CAP ADAPTORS) SHOULD NOT, IN ANY CIRCUMSTANCES, BE USED.

Connecting Services

OVERSEAS CONNECTION

Note: Connection to a mains voltage supply OVERSEAS requires particular attention.

Care must be taken when connecting supplies abroad since the supplies can be of REVERSE POLARITY.

The significance of REVERSE POLARITY is that when equipment is switched off it may not be electrically isolated.

The only certain way of making equipment safe is to unplug it.

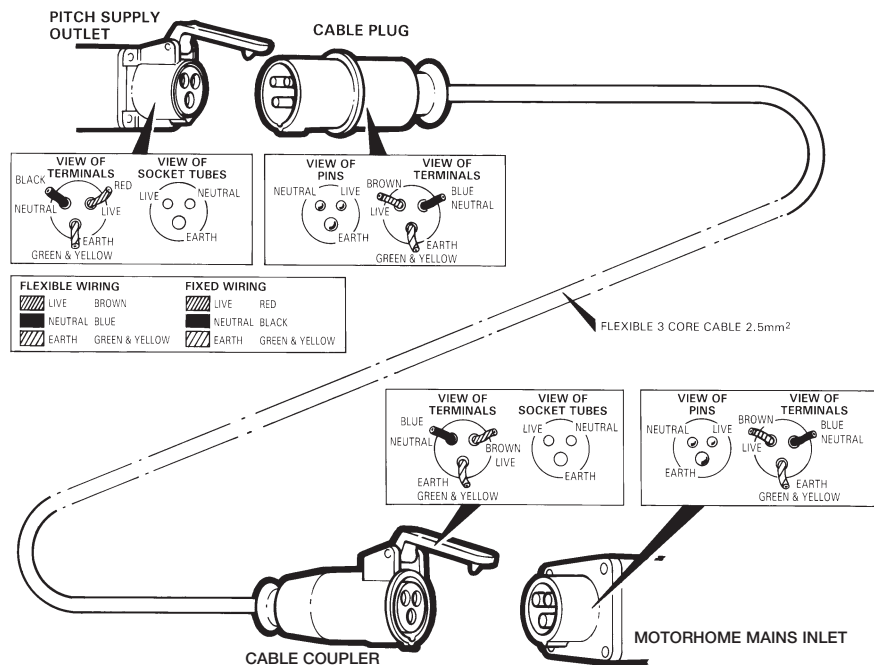
If electrical polarity indication is not included in your motorhome electrical equipment, it is useful to have a means of checking polarity of the mains supply, especially when touring overseas.

There are available several proprietary makes of equipment for the purpose.

If it can be achieved, it is preferable to connect live to live, and neutral to neutral to maintain full electrical protection.

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

WIRING OF CONNECTING CABLE AND MOTORHOME MAINS INLET



WARNING

IT IS ESSENTIAL THAT CONNECTIONS ARE MADE EXACTLY AS SHOWN. IF TERMINAL MARKINGS ARE NOT IN ACCORDANCE WITH THE DIAGRAM THEY MUST BE IGNORED. IF IN DOUBT CONSULT A QUALIFIED ELECTRICIAN.
THE LEGAL MAXIMUM LENGTH OF THE MAINS INLET CABLE IS 25 METRES. WHEN IN USE IT MUST BE FULLY UNCOILED.

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.

The following items need to be added together if used simultaneously.

230V Mains equipment typical consumption figures:

Water heater	3.6A approx.
Travelling kettle	3.2A approx.
Battery charger	1.0A approx.
Portable colour TV	0.3A approx.
60w light bulb	0.3A approx.
Ultraheat 500W	2.2A approx.
Ultraheat 1000W	4.5A approx.
Ultraheat 2000W	8.5A approx.

THERMAL INSULATION AND 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. The classifications are as follows:

Grade 1

A motorhome with an average thermal transmittance (u) that does not exceed $1.7\text{w}/(\text{m}^2\text{K})$.

Grade 2

A motorhome with an average thermal transmittance (u) that does not exceed $1.7\text{w}/(\text{m}^2\text{K})$ and which can achieve an average temperature difference of at least 20K between inside and outside temperatures when the outside temperature is 0°C .

Grade 3

A motorhome with an average thermal transmittance (u) that does not exceed $1.2\text{w}/(\text{m}^2\text{K})$ and which can achieve an average temperature difference of at least 35K between inside and outside temperatures when the outside temperature is -15°C .

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

ELECTRICAL SYSTEMS

Motorhome Battery	28
Fault Finding	28
Mains Unit	29
12V Power System	30
Transformer/Charger Unit	30
The EC200 Electronic Control System	30
System overview	31
Power supply unit - System operation	31
Control panel operation	36
Technical data and approvals	40
Generator Guidelines	42

Electrical Systems

MOTORHOME BATTERY

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

A deep cycling heavy duty 12V battery should be used to provide power for lights and other electrical appliances. A proprietary brand leisure battery with 85A capacity is recommended. (It must have tube venting capability for internal battery boxes.)

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 leisure type battery, maintained in good condition is used.

The battery should be vented to the outside and should be properly secured. 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.

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

WARNING: Explosive gases may be present at battery - prevent flames and sparks.

Do not store highly flammable materials or pressurised containers in this area.

WARNING: Switch off all appliances and lamps before disconnecting the battery.

Smoking is prohibited around the battery compartment.

Your motorhome has been fitted with an in-line fuse next to the + battery terminal. It is recommended that the rating of the fuse fitted in this location does not exceed 20A.

Please note the leisure battery, where factory fitted, is not charged and should be charged for a minimum of 24 hours before use.

When fitting the battery, ensure that the correct polarity is observed and that terminals are securely fastened.

Ensure the battery is secured with the strap provided.

FAULT FINDING

1. Mains supply

If mains supply is not available when mains switch and MCB's are switched on, check supply at site distribution and/or mains lead and connections.

2. **Earth faults or MCB tripped**
See RCD/MCD Section.
3. **Charger switch fails to illuminate**
Check mains supply as for No.1 and 2.
4. **Battery discharged or not charging with charger on**
Check battery terminals.
5. **12V distribution circuit failure**
Check and replace relevant DC output fuse as required.
6. Consult the manufacturers regarding any further difficulties, in particular those related to mains voltage section.
7. There are no user-serviceable or replacement parts in the consumer unit. All service of this nature should be referred to the manufacturers.

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.

PLUG-IN-SYSTEMS LIMITED PROVIDE AN ON-CALL SERVICE FOR WARRANTY OR NON-WARRANTY REPAIRS.

IF YOU WISH TO TAKE ADVANTAGE OF THIS SERVICE FOR PLUG-IN-SYSTEMS EQUIPMENT ONLY:

Telephone: (01482) 652523 and ask for DIRECT SERVICES.

MAINS UNIT

This acts as the main switch for the motorhome allowing isolation of all circuits. It forms part of the Power System along with the Transformer/Charger Unit (if fitted).

The mains unit replaces the conventional fusebox. Similar, but larger ones are often fitted in new houses.

The unit gives both overload (MCBs) and earth leakage protection (RCD) for the electrical supply in your motorhome.

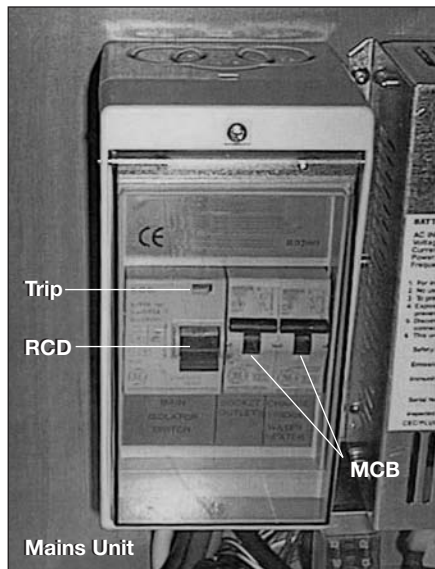
For normal operation all switches on the unit need to be in the ON position. The small switches on the unit are known as MCBs (miniature circuit breakers).

These take the place of the conventional fuse but are more convenient.

Note: Having too many appliances switched on at the same time will trip the MCBs. This is a safety measure. (For appliance ratings, see mains consumption, below).

In the event of a fault the MCB 'trips' i.e. automatically moves to the OFF position.

After elimination of the fault the MCB can be re-set by switching to the ON position, (against the spring pressure in an upwards direction).



If an earth fault develops or a person touches a live piece of equipment the leakage of current to earth should immediately operate the RCD (residual current device) and 'trip' the main switch, to the OFF position.

This switch is only re-settable after elimination of the fault.

To re-set, operate the switch as for MCB's.

Periodically the RCD should be checked by operating the test button marked 'T'. The unit should immediately switch to the OFF position. If the unit does not switch off then a qualified electrician should be consulted.

If the unit does switch off, the test is complete and the switch can be re-set restoring the supply back to normal.

Add together the current ratings for each electrical appliance you wish to use simultaneously and ensure the total does not exceed 10A. You will find the following table a useful guide to typical values.

230V MAINS CONSUMPTION

FRIDGE	0.5A
CHARGER	0.5A
WATER HEATER	2.75A

Formula for calculating current consumption of appliances:

$$\frac{\text{Watts}}{\text{Volts}} = \text{Amps}$$

Electrical Systems

12V POWER SYSTEM

Note: The connection of the battery charger to the mains supply is in accordance with the Regulations for Electrical Installations 16th Edition (IEE Wiring Regulations) BS 7671: 1992.

The Power System is supplied fitted remotely in a convenient position and comprises:

- (a) Mains Unit
- (b) Transformer/Charger Unit

TRANSFORMER/CHARGER UNIT

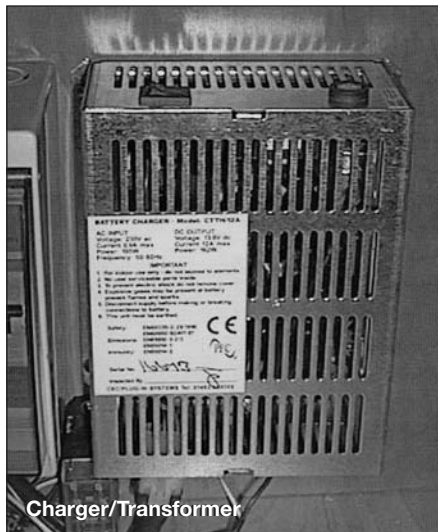
The transformer/charger unit has important safety features:

- Overload protection
- Short circuit protection
- Reverse battery polarity protection

The unit has been designed not only to operate as a battery charger, but also for use as a power supply, should a 12V DC battery not be present in circuit. It is, however, recommended that a good quality leisure battery is installed.

Once connected to a 230V mains supply and switched on, its operation is fully automatic.

To charge either battery, position the battery selector switch to the appropriate position on the distribution panel.



When used as an alternative DC power supply, with no battery in circuit, the will supply a suitable output for use with pump, lighting, T.V., radio etc. Should the unit become overloaded the 12A DC fuse will blow. Removal of the overload or fault allows the unit to return to normal operation, after replacing the DC fuse. A 1A anti-surge AC fuse is provided as further protection.

Under normal circumstances the total load required by motorhome equipment should not produce an overload situation.

The facility for drawing 12V supply from the cab battery is intended for standby situations only, and care should be taken not to run the cab battery too low, some models feature cab battery protection circuitry.

If the cab battery has been used on site, then the engine driven alternator will recharge both it and the caravan battery whilst travelling.

However, once the cab battery is fully charged, the alternator will supply a trickle charge only to the caravan battery.

This will take place regardless of the position of the battery selector switch on the distribution panel.

1. INTRODUCING THE EC200 ELECTRONIC CONTROL SYSTEM

With the use of new technology and an innovative approach to user interfacing, the EC200 Power Control System provides a complete control solution for a wide range of leisure vehicles.

The microprocessor controlled digital system allows the user to control equipment and view / edit system information from a user-friendly control panel that incorporates a liquid crystal 'ALPHA-NUMERIC' display.

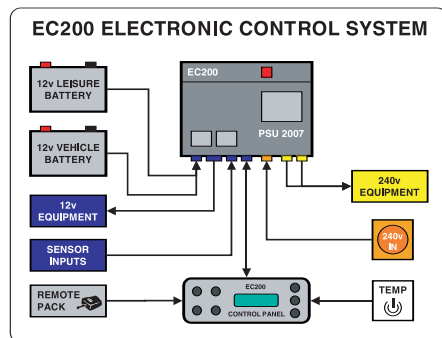
The built in 'intelligence' prevents over discharge of the vehicle battery, allows greater control of the water system and has a built in alarm clock. With the addition of an

optional plug-in remote control pack the Power and Auxiliary functions can be operated by a key fob controller.

The system meets relevant UK legislation, including the requirements of BS7671, EN1648-1 and -2. Further technical data is contained in section 5.

2. SYSTEM OVERVIEW

The following diagram shows the components that make-up the EC200 system. The system basically comprises a Power Supply and control Unit (PSU2007) that houses the Mains 240v protection equipment, a 200 watt 12v charger / power supply, and power control / protection for the 12v equipment. The PSU2007 is connected to a Digital Control Panel via a data cable.

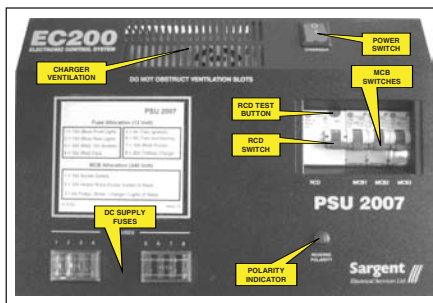


3. POWER SUPPLY UNIT – SYSTEM OPERATION

3.1 INTRODUCTION

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 following diagram shows the PSU2007 layout.



WARNING: Under heavy loads the PSU2007 case will become hot. ALWAYS ensure the ventilation slots have a clear flow of air. Do not place combustible materials against / adjacent to the PSU2007

3.2 MAINS CONNECTION

For your safety it is IMPORTANT that you follow these connections instructions each time your Leisure Vehicle is connected to a mains supply.

- Ensure suitability of the Mains Supply.**
Your Leisure Vehicle should only be connected to an approved supply that meets the requirements of BS7671. 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.
- Switch the PSU2007 internal Charger unit OFF.** Locate the red 'Charger' power switch on the PSU2007 and ensure the switch is in the OFF (0) position before connection to the mains supply.
- 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.

Electrical Systems

- D) **Check Residual Current Device operation.** Locate the RCD within the PSU2007 and ensure the RCD is switched on (lever in up position). Press the 'TEST' button and confirm that the RCD is turned 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 3.4.
- E) **Check correct Polarity.** Locate the 'Reverse Polarity' indicator on the PSU2007 and ensure that the indicator is NOT illuminated. If the indicator is illuminated see section 3.4.
- F) **Check Miniature Circuit Breakers.** Locate the MCB's within the PSU2007 (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 3.4.
- G) **Turn the PSU2007 ON.** Locate the red power switch on the PSU2007 and turn to the ON (I) position. The switch will illuminate when turned on.
- H) **Check operation of equipment.** It is now safe to check the operation of the 12v and 240v equipment.

3.3 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 75 to 120 Ah (Ampere / hours). A normal car battery is NOT suitable.

It is recommended that the leisure battery is always 'in circuit' when the system is in use.

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 20A.

B) Installation & Removal

Always disconnect the 240v mains supply and turn the PSU 2007 charger switch to the OFF (0) position 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.

C) 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 10.5v. Discharging a battery below this figure can cause permanent damage to one or more of the cells within the battery.

3.4 FAULT TABLE

Fault	Possible Cause	Proposed Fix
No 240 volt output	Connecting lead between the site and Leisure Vehicle not connected	Check and connect lead as per 3.2.C Check also input connector at the base of the PSU 2007
	RCD switched off	Reset RCD as per 3.2.D
	RCD not operating correctly	Check supply polarity; if the RCD continues to fail contact your Dealer, as there is probably a wiring or equipment 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 a wiring or equipment fault.
	No or deficient supply from site	Contact site Warden for assistance
	Other fault	Contact your Dealer
No 12 volt output	No 240v supply	Check all above
	Charger not switched on	Switch charger switch on (I) position, switch will illuminate
	Battery not connected and / or charged	Install charged battery as per 3.3.B
	Power switch 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 shown in 3.5

Electrical Systems

Fault	Possible Cause	Proposed Fix
No 12 volt output	Equipment switched off / unplugged	Check equipment is switched on and connected to the 12v supply
	Other fault	Contact your Dealer
Control Panel Problems	Control Panel has no display	Check batteries, turn PSU2007 charger switch on, and ensure mains supply is connected. Check control panel connecting lead at PSU2007 and behind Control Panel Contact your Dealer
	12v Power turns off	Battery save feature has operated to protect the Vehicle battery and the Leisure battery is flat (see section 4.4) Engine has been started, all equipment has been disconnected to meet EMC requirements
	Control Panel display corrupt / erratic function	Observe control panel handling instructions Reboot control panel by removing control panel bezel, removing two fixing screws, and unplugging the control panel connecting lead. Wait 30 seconds then reconnect and re assemble.
	Control Panel contrast poor	Observe control panel handling instructions Remove control panel as above but do not unplug. Adjust contrast preset on back of control panel using jewellers screwdriver
	Control Panel current reading incorrect	Contact dealer for current calibration process

3.5 FUSE / MCB TABLE

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 contact your dealer.

Fuse	Rating	Fuse Colour	Wire Colour	Description
1	15 Amps	Blue	Slate	Front Lights
2	15 Amps	Blue	Pink	Rear Lights
3	10 Amps	Red	Yellow / White	12v Sockets
4	10 Amps	Red	Black / Tracer	Fans
5	5 Amps	Tan	Yellow / Green	Heater / Hob / Other Ignitions (if fitted)
6	5 Amps	Tan	Slate / Red	Aux / Awning Light
7	10 Amps	Red	Green/Tracer/Purple	Water Pumps / Toilet
8	20 Amps	Yellow	*	Charger (internally connected)
Battery	20 Amps	Yellow	Brown / Blue	Fuse remotely located near battery

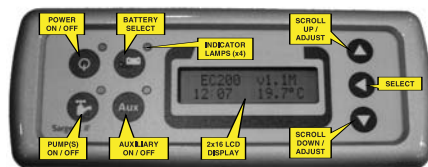
MCB	Rating	Wire Colour	Description
1	10 Amps	White	240v sockets
2	10 Amps	White (Yellow for heater)	Extra 240v Sockets / Heater
3	6 Amps	Black (Blue for water heater)	Fridge / Water Heater / 12v Charger (internally connected)

Electrical Systems

CONTROL PANEL OPERATION

4.1 LAYOUT AND BUTTONS

The following diagram shows the control panel layout.



Item	Function	Options / Notes
Power ON / OFF	Use to turn the main power on and off	The adjacent LED is illuminated when the power is ON
Battery SELECT	Use to select the Leisure or Vehicle battery as the supply source	The adjacent LED is illuminated when the VEHICLE battery is selected; by default the Leisure battery is selected and is indicated by the battery select LED off.
Pump ON / OFF	Use to turn the water pump(s) power on and off (see section 4.3)	The adjacent LED is illuminated when the pump power is ON
Aux ON / OFF	Use to turn the Auxilliary power on and off (see manufacturers handbook for detail of what items are operated by the auxilliary function)	The adjacent LED is illuminated when the auxilliary power is ON
Scroll UP ▲	Use to scroll the display up (settings section of the menu) (see section 4.3)	Note: the menu screens operate in a continuous loop, therefore you can use either the UP or Down buttons to move to any screen
Scroll DOWN ▼	Use to scroll the display down (readings section of the menu) (see section 4.2)	
Select ◀	Use to select a menu item within the settings section (see section 4.2 & 4.3)	Use to move to the next setting, when entering alarm

Note: the display backlight operates for approximately 6 seconds after any key press

4.2 MENU FUNCTIONS - Readings section

Display	Description	Options / Notes
EC200 v1.1H 12:00 23.9°C	Main Control Panel display showing modelnumber (EC200), software version number (v1.1), specification (H), current time (12:00) and internal temperature (23.9°C) in centigrade	The addition of an asterisk (*) in the top left of the display indicates that the alarm is set
LEISURE BATTERY 12.5V (Good)	Voltage reading and battery condition description for the on-board leisure battery	<10.9 = (Poor) 10.9 to 11.8 = (Fair) 11.9 to 14.4 = (Good)
VEHICLE BATTERY 13.3V (Good)	Voltage reading and battery condition description for the vehicle battery See section 4.4 for details of the Vehicle Battery save feature	<10.9 = (Poor) 10.9 to 11.8 = (Fair) 11.9 to 14.4 = (Good)
FRESH WATER 25% FULL	Water level in the fresh water tank (5 measurement levels)	0% < ¼ Full (Empty) 25% >= ¼ Full 50% >= ½ Full 75% >= ¾ Full 100% = Full
WASTE WATER 0% FULL	Water level in the waste water tank (2 measurement levels)	0% < ½ Full 50% >= ½ Full (optional) 100% = Full
EXTERNAL TEMP 26.5°C	External temperature (in degrees centigrade) as measured by the external temperature probe (only available in H specification systems)	
BATTERY CURRENT 5.4 AMPS	Current (in Amps) being drawn from or charged into the selected battery (only available in H specification systems)	Negative figure (-) = current being drawn from the selected battery Positive figure = current being used to charge the selected battery

4.3 MENU FUNCTIONS - Settings section

Display	Description	Options / Notes
PUMP SELECT <INTERNAL>	Shows the currently selected pump that will be operated by pressing the pump on / off switch (TAP symbol) Use the select button (◀) to change	<INTERNAL> = The internal pump will be operated by the pump switch <EXTERNAL> = The external pump will be operated by the pump switch <BOTH> = Both the Internal and External pumps will be operated simultaneously by the pump switch
CLOCK SET 12:00	Access to set the internal clock Press the select button (◀) to select the HOUR Use the up / down (▲ ▼) buttons to change Press the select button (◀) to select MINUTE Use the up / down (▲ ▼) buttons to change Press the select button (◀) to exit	Please note the clock uses a 24 hour cycle
ALARM SET 12:00	Access to set the alarm clock Press the select button (◀) to select the HOUR Use the up / down (▲ ▼) buttons to change Press the select button (◀) to select MINUTE Use the up / down (▲ ▼) buttons to change Press the select button (◀) to exit	Please note the alarm uses a 24 hour cycle
ALARM = OFF	Shows the alarm clock status (on / off) Press the select button (◀) to switch between OFF or ON	The addition of a asterisk (*) in the top left of the main display indicates that the alarm is set

4.4 WARNING MESSAGES

Display	Description	Options / Notes
VEHICLE BATTERY DANGEROUSLY LOW	This WARNING display indicates that the Vehicle battery voltage is low (10.9 volts or less). The panel will beep for one minute and then switch over to the Leisure battery to prevent draining the Vehicle battery	You can switch over to the Leisure battery immediately (and cancel the beep) by using the battery selector switch
SYSTEM DISABLED ENGINE STARTED	This WARNING display indicates that the system has been disabled because the vehicle engine is running	EMC (Electro Magnetic Compatibility) directive 89/336/EEC requires that electrical accessories within the vehicle are disconnected while the vehicle is in motion

5. TECHNICAL DATA & APPROVALS

5.1 Outline Specification

INPUT 230v	230 Volts / 0 to 16 Amps	+ / - 10%
OUTPUT 230v	RCD protected, 3 x MCB outputs of 10, 10 and 6A via 2 x 9 way connectors	
INPUT 12v	2 x 20A battery inputs via a 6 way connector	
OUTPUT 12v	20A total output via 4 16A switched channels protected by 7 fused outputs via a 15 way connector	
Integrated CHARGER	Input 110-240 Volts AC +/- 10%, Frequency 50Hz +/- 6%, Current 3.15A max DC Output 13.5 Volts nominal, Current 16 Amps max (200 Watts)	
Signal INPUT	4 x Fresh water level, 2 x Waste water level, 1 x Engine running via a 8 way connector	Fresh water negative sensed Waste water positive sensed
Data IN / OUT	Data communication and power to Control Panel via 20 way header connector	
IP rating	IP31	
Operating temperature	Ambient 0 to 35°C Centigrade PSU case temperature with full load 40°C Max	

5.2 Dimensions

PSU2007	Overall size (HxWxD) 230 x 370 x 110mm	Fixing centres 195 x 360mm
	Weight 3.2Kg	
CONTROL PANEL	Overall size (HxWxD) 80 x 193 x 40mm	Fixing centres 175mm
	Weight 170g	

5.3 Approvals

System: EN 1648-1, EN1648-2 compliant, BS7671:2001 compliant

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

Miniature Circuit Breakers: MCB's (10 & 6A) type C6000A breaking capacity to EN 60898

Electro Magnetic Compatibility (EMC) directive 89/336/EEC

Integrated Charger: BS EN 60335-1/2.29, 89/336/EEC, IEC61000-3.2/3:1995

Electrical Systems

GENERATOR GUIDELINES

- Lack of regular servicing can be the cause of most generator problems, gensets under 2kW are mainly dependent on engine speed for output frequency and voltage. Poor or no servicing may cause the engine speed governor to run the genset to fast. Therefore, frequency and output voltage can rise above the specification of the machine data plate i.e.

230V at 50Hz. This may cause damage to electrical/electronic equipment (such as battery chargers).

- A generator should always run for a few minutes prior to connection with the motorhome electrics, to allow it to warm up and the output to settle to a steady level.
- The AC output of generators is often derived from an AC alternator, rectified to

DC then inverted back to AC. In essence this means the output sinewave may not run sophisticated electronics efficiently. Some of the new wave of gensets are more sophisticated in their production of a sinewave output and are more suited to run electronic equipment.

- If in doubt consult your genset dealer or manufacturer for advice

EQUIPMENT DETAILS

Water Pump (Shurflo)	44
Truma Ultrastore	44
Refrigerators	47
Models RM6270, RM6271, RM6361, RM6401, RM6291	48
Model RM6501	52
Model RM4212 and RM4213	51
General information	52
SMEV 400 Series Cooker	54
Stoves Hobs, Grills and Ovens	56
Dometic Extractor Fan	60
Thetford Cassette Porta Potti	61
Heating	68
Trumatic C3402 & C6002	68
Truma S 3002 Heater	75
Truma Ultraheat	77
Butterfly Outlets	78
Front Swivel Seat	78
Side Locker	78
Tables	79
Rooflights & Windows	79
Shower	81
Omnistep Slide-out	82

Equipment Details

The instructions covering fitted equipment to your motorhome 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, the 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 motorhome 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 motorhome, 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 the Swift Group Supercare customer care service department on 01482 875740.

IMPORTANT

To maximise the use and life of all fitted equipment in your motorhome 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 Swift Group appointed dealer, particularly before attempting to install EXTRA EQUIPMENT.

SHURFLO WATER PUMP

This pump is a completely sealed unit designed for intermittent use and is self-priming.

THE TRUMA ULTRASTORE WATER HEATER

OPERATING INSTRUCTIONS

Attention: Before using for the first time, it is essential to flush the entire water supply through with clean warm water. Always mount the cowl cap when the water heater is not being operated! Drain the water heater if there is a risk of frost! **There shall be no claims under guarantee for damaged caused by frost!**

When connecting to a central water supply (rural or city connection) or when using more powerful pumps, a pressure reducer must be used which prevents pressures of greater than 2.8 bar occurring in the Ultrastore.

Filling the Truma Ultrastore with water

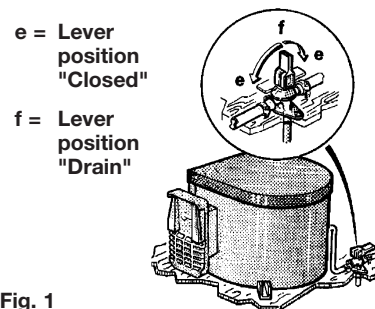


Fig. 1

1. Check that the safety/drain valve in the cold-water intake is closed. Lever should be in the horizontal position, position (e).
2. Open the hot tap in the bathroom or kitchen with pre-selecting mixing taps or single lever fittings set to hot.
3. Switch on power for water pump (main switch or pump switch). Leave the tap open to let air escape while the water heater is filling. The heater is filled when water flows out of the tap.

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

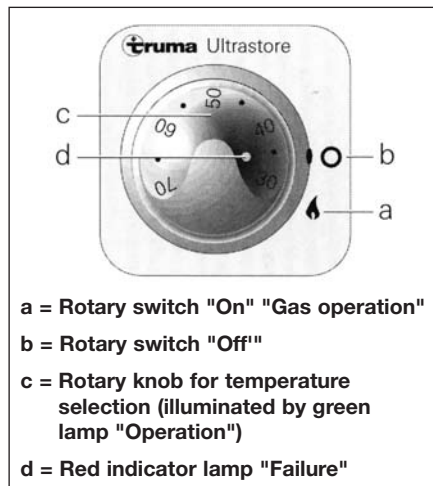
Equipment Details

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

Draining the water heater

1. Disconnect power for water pump (main switch or pump switch).
2. Open hot water taps in bathroom and kitchen.
3. Open safety/drain valve: Lever in vertical position, position (f).
4. The water heater is now drained directly to the outside via the safety/drain valve. Check that the water contents have been completely drained (10 litres).

Gas Operating Instructions



Gas operating instructions

Attention: Never operate the water heater without water in it!

If the wall cowl is positioned close to an opening window (or hatch) - in particular directly under it - it must remain closed when the water heater is in use (see warning plate).



1. Remove cowl cover.
2. Open gas cylinder and open quick-acting valve in the gas supply line.
3. Select required water temperature at rotary knob (c) infinitely variable from approx. 30° to 70°C.
4. Switch on water heater at the rotary switch (a) on the control panel, green indicator lamp "Operation" lights up.
5. If there is air in the gas supply line, it may take up to a minute before the gas is available for combustion. If the appliance switches to "Failure" during this period, switch off the appliance - wait 5 minutes - and switch on again!

Equipment Details

Switching off (gas operation)

Switch off the water heater at the rotary switch (b).

Drain the water heater if there is a risk of frost!

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

There shall be no claim under guarantee if this point is not observed.

Always remove the cowl cover prior to operating the water heater!

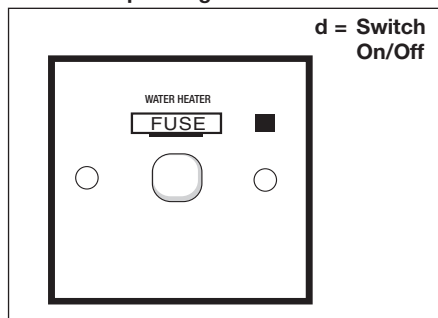
Red indicator lamp "Failure"

The red indicator lamp (d) lights up if there is a failure.

The reason for such an indication is, for example, no gas available or air in the gas supply system, triggering of the excess temperature monitor etc. To unlock, switch off the appliance, wait 5 minutes, and switch on again.

In event of faults, always contact the Truma Service on Tel: 01283 511092.

Electrical Operating Instructions



Switch the switch (d) on the control panel to "On". The indicator lamp indicates the electrical water-heating element is operative.

When using the vehicle switches refer to operating instructions of the vehicle manufacturer or see switch labels.

Note: The water temperature cannot be selected, automatic temperature limitation at approx. 70°C. For a faster heating up period the appliance can be simultaneously operated with gas and electrical power.

Note: The water tank in the Truma-Ultrastore is made of high quality food-proof stainless steel VA.

Use wine vinegar for de-scaling the water supply. Allow the product to react and then thoroughly flush out the appliance with plenty of fresh water. To sterilise the water we recommend "Certisol- Argento". Other

products, particularly those containing chlorine are unsuitable.

In order to avoid the proliferation of micro-organisms, heat the Ultrastore to 70° at regular intervals.

Do not use the water as drinking water!

Important Operating Notes

1. If the cowl is positioned close to an opening hatch (window), keep this closed during operation. See warning plate. Always mount the cowl cover if the heater is not being used. Non-observation of this point can lead to the function of the appliance being impaired through water, dirt or insects.
2. The guarantee will be invalidated if this point is not observed. Always remove the cowl cover prior to operating the water heater!
3. If there is a defect in the electronics, return the control Printed Circuit Board well padded. If you fail to pack it correctly the guarantee will be invalidated. Only use original Truma Ultrastore control P.C.B's as spare parts.
4. If just the cold water system is being used, without water heating, the header tank becomes more vulnerable to frost damage. Accordingly the contents should be drained by operating the safety/drain valve. This also applies when the motorhome is in storage.

Equipment Details

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
1. Repair jobs are only to be carried out by an expert.
 2. The following would invalidate the guarantee:
 - a. Any alteration to the appliance (including cowl)
 - b. The use of non-Truma spare parts/accessories
 - c. Non observance of the operating instructions.
 3. The operating pressure for the gas supply is 30mbar (or 28mbar butane/37mbar propane) and must correspond to the operating pressure of the appliance (see name plate).
 4. Do not operate the water heater when refuelling the vehicle and when in the garage.
 5. During the initial operation of a brand new appliance (or after it has not been used for some time), a certain amount of

fumes, and a slight smell, may be noticed for a short time. Remedial action is to immediately run the heater at maximum output and to ensure adequate room ventilation.

6. If the burner makes an unusual noise or if the flame lifts off, it is likely that the regulator is faulty and it is essential to have it checked.

Technical Data

Water contents:	10 litres
Water pressure:	up to max. 2.8 bar
Type of gas:	Liquid Gas (propane or butane)
Operating Pressure:	30mbar (or 28mbar butane, 37mbar propane)
Rated thermal output:	1500W
Gas consumption:	120g/h
Heating time to approx. 70°C:	
Gas operation:	approx. 35 mins
Electrical operation:	approx. 70 mins
Gas and electrical operation:	approx. 20 mins
Power consumption 12V	
Ignition:	0.17A
Heating Up:	0.08A
Standby:	0.04A
Power consumption 230V	
Heating Up:	(2A) 450W
Weight (empty):	6.7Kg

REFRIGERATORS

Before using your refrigerator for the first time, it is advisable to wash the interior and its accessories.

When using the refrigerator on gas ensure that the gas isolation tap is fully open by turning the knob to the vertical position. The tap is located inside the sink unit at floor height. When travelling the fridge can only be operated in the 12V mode.

Note: Before operating the refrigerator on 12V, it should be pre-cooled, together with its contents, by running it on gas or 230V for a few hours before changing over to 12V for your journey.

The current drain is approximately 7A to 14A (model specific) and power is only available when the ignition circuit is switched on. On site, only the mains electric or gas modes should be used.

The refrigerator can run on either 230V, 12V or LP gas. Changing between these modes of operation is carried out by means of the controls on the control panel.

Caution: Only use one source of energy at a time.

After initial installation, servicing or changing gas cylinders etc., the gas lines may contain some air which should be allowed to escape by briefly turning on the refrigerator or other appliances. This will ensure that the flame lights immediately.

Equipment Details

The flame failure device will automatically shut off the gas to the burner if the flame is blown out. On electric ignition versions, the flame failure device will also shut off the gas if the burner does not re-light within about a minute of the flame being blown out.

MODELS RM6270, RM6271, RM6361, RM6401, and RM6291

Cleaning

Before using the refrigerator, it is advisable to clean the appliance both inside and out.

Use a soft cloth and lukewarm water with a mild detergent.

Then rinse the appliance with clean water and dry thoroughly.

Remove dust from the refrigerator unit at yearly intervals using a brush or soft cloth.

To avoid deterioration of materials:

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.

USING THE REFRIGERATOR

The refrigerator is silent in operation.

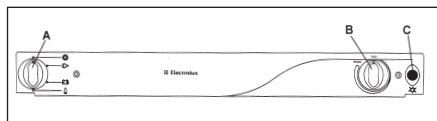
When the appliance is first put into operation, there may be a mild odour, which will disappear after a few hours. Ensure the living area is well ventilated.

The freezer compartment should be cold about one hour after switching on the refrigerator.

The refrigerator will take several hours to reach its operating temperature.

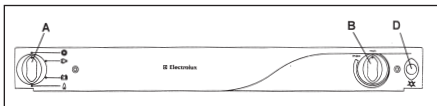
Control

A. Manual Ignition (e.g. RM6270)



- A = energy selector switch
- B = gas/electric thermostat
- C = manual ignition button ('Piezo ignition')

B. Automatic Ignition (e.g. RM6271, RM6361, RM6401 and RM6291)



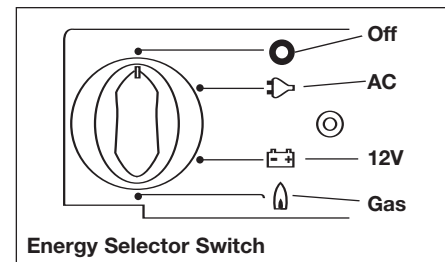
- A = energy selector switch
- B = gas/electric thermostat
- C = 'automatic ignition' indicator

Note: The refrigerator is equipped to operate off mains power, 12V DC or liquid gas. The desired power option is selected by means of

energy selector switch (A). Energy selector switch (A) has four settings: AC mains power, DC (12V), gas (liquid gas), O (off).

Electrical Operation

12V DC Operation



Your refrigerator will only operate on 12V when the engine of the vehicle is running.

1. Set the energy selector switch (A) to

The refrigerator will run continuously without thermostatic control.

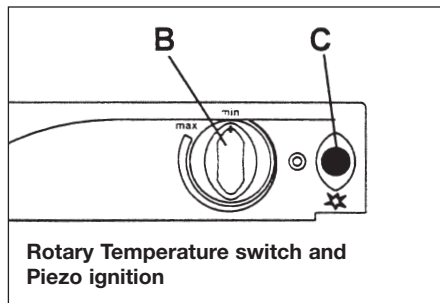
WARNING:

When in transit, your refrigerator should be run on 12V and NOT on gas.

Mains power (230V)

Note: This option should only be selected where the supply voltage of the connection for power supply corresponds to the value specified on the data plate. Any difference in values may result in damage to the appliance.

Equipment Details



1. Set energy selector switch (A) to gas.
2. Use rotary switch (B) to regulate the temperature in the main refrigerator compartment.

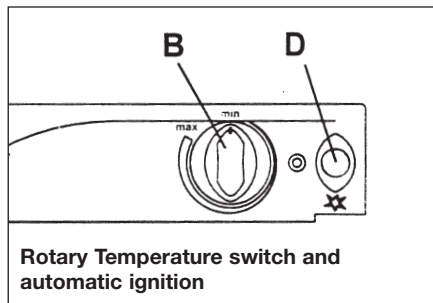
LP Gas Operation

Note: The refrigerator should only be operated using liquid gas (propane, butane).

Operation using gas is prohibited in petrol stations.

1. Open the valve of the gas cylinder (check there is enough gas).
2. Open the on-board shut-off valve to the gas supply.

Proceed to the description that applies to your model.



Manual ignition

1. Set energy selector switch (A) to gas.
2. Press and hold rotary switch.
3. Activate Piezo ignition (C) several times at intervals of 1-2 seconds.
4. Check the inspection glass to see whether there is a flame (the inspection glass is inside the refrigerator at the bottom left).
5. Keep rotary switch (A) depressed for another 10-15 seconds, then release.
6. Check the inspection glass to see whether a flame is burning.
7. Repeat the entire process if the flame has gone out.
8. Use rotary switch (B) to regulate the temperature in the main refrigerator compartment.

Automatic ignition

1. Set energy selector switch (A) to gas.
2. Press and hold rotary switch (B).
3. The ignition process is activated automatically, accompanied by a ticking sound; the indicator lamp (D) will flash. Upon successful ignition, the sound and the flashing will stop.
4. Keep rotary switch (B) depressed for another 10-15 seconds, then release.
5. If the flame goes out, the ignition system will repeat the ignition process automatically.
6. Adjust the temperature in the main refrigerator compartment using rotary switch (B).

All refrigerators, whether manual or automatic ignition, are equipped with automatic flame protection, which automatically cuts off the supply of gas approximately 30 seconds after the flame goes out.

When using for the first time, and after changing the gas cylinder, the gas pipes may contain air. By means of brief operation of the refrigerator and any other gas appliances (e.g. cookers), air is removed from the gas pipes. The gas will then ignite without delay.

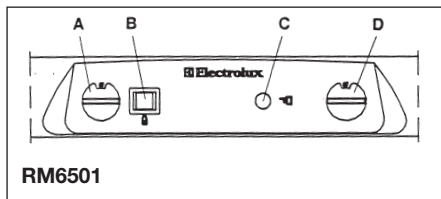
Equipment Details

SWITCHING OFF

1. Set energy selector switch (A) to position 'O' (OFF). The appliance is now fully switched off.
2. When the motorhome is in storage for a long period, leave the door of the refrigerator and the frozen food compartment ajar.

Switching off gas operation

If the refrigerator is to be taken out of service for an extended period of time, the on-board shut-off valve and the cylinder valve must be closed.



MODEL RM6501

STARTING THE REFRIGERATOR

LP Gas operation

After initial installation, servicing, or changing gas cylinders etc., the gas pipes may contain some air that should be allowed to escape by briefly turning on the refrigerator or other appliances. This will ensure that the flame lights immediately.

To start gas operation:

1. Open the shut-off valve of the gas bottle (check that there is enough gas). Open any on-board shut-off valve.
2. Set the thermostat knob (D) to the highest setting.
3. Turn the energy selector (A) to position 'GAS'. A ticking sound will be heard and the lamp (B) will start flashing.
4. Push the button (C) in until it reaches the bottom - and hold. This opens the flame failure device and allows gas to flow to the burner.
5. When the flame lights, the sparking stops automatically and the lamp stops flashing.
6. Hold the button (C) an additional 10-15 seconds to activate the flame failure device, and then release it. If the lamp starts flashing again, repeat steps 4-6.

To terminate gas operation turn the knob (A) to 'OFF' position.

230-240 V operation

Before operating the refrigerator, check that the voltage stated on the data plate is the same as the main voltage in use.

Turn the thermostat knob (D) to its highest (coldest) position.

Set the energy select (A) to position 'AC'.

12 V operation

Only operate your refrigerator on 12 V when the engine of the vehicle is running - otherwise your battery will soon be discharged.

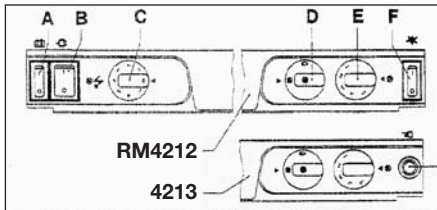
Set the energy selector (A) to position 'DC'.

REGULATING THE TEMPERATURE

It will take a few hours for the refrigerator to reach normal operating temperature. So we suggest you start it well in advance of a trip and if possible store it with pre-cooled foodstuffs.

On 230-240 V operation and LP gas operation the refrigerator is controlled by a thermostat and the thermostat knob (D) should be set at 3-5. If a lower (colder) temperature is desired set the thermostat to a higher figure.

On 12 V operation the refrigerator works continuously.



MODEL RM4212/4213

STARTING THE REFRIGERATOR


LP Gas operation

After initial installation, servicing, or changing gas cylinders etc., the gas pipes may contain some air which should be allowed to escape by briefly turning on the refrigerator or other appliances. This will ensure that the flame lights immediately.

To start gas operation:


1. Open the shut-off valve of the gas bottle (check that there is enough gas). Open any on-board shut-off valve.
2. Check that the switches for mains and 12 V operation are off.

If you have model RM 4213 proceed as follows:


3. Turn on the gas supply by pressing the (D) knob and turning it to the position 
4. Set the thermostat knob (E) to the highest setting.

5. Depress switch (F). A light in the switch should now start to flash, indicating that sparks are being generated at the burner.
6. Press the (D) button. This opens the flame failure device and allows gas to flow into the burner.
7. When the flame lights, the sparking stops automatically and the switch stops flashing.
8. Keep the (D) button pressed for a further 10 to 15 seconds to activate the flame failure device, then release it.

If you have Model 4212 proceed as follows:

3. Turn on the gas supply by pressing the (D) knob and turning it to the position 
4. Set the thermostat knob (E) to the highest setting.
5. Keeping the flame failure device button (D) pressed, operate the igniter (G) until the flame lights.
6. Keep the (D) button pressed for a further 10 to 15 seconds then release it.

The flame can be reserved in a viewing glass inside the refrigerator at the bottom left (RM 4212).

To terminate the gas operation, turn knob (D) to  and (when applicable) set switch (F) to "0".

230 V operation

Turn off gas or 12 V operation when applicable.

Turn the knob (C) of the thermostat to its highest (coldest) position.

Set switch (B) to position 1. The switch will light up green when the power supply is connected.

12 V operation


Only operate your refrigerator on 12 V when the engine of the vehicle is running - otherwise your battery will soon be discharged.

If applicable, turn off the gas operation.

Set the 12 V rocker switch (A) to 1. The switch will light up red when the power supply is connected.

TURNING OFF THE REFRIGERATOR

If the refrigerator is not to be used for some time:

1. Set any switches to 0.
2. Set the gas valve (D) to .
3. Shut off any on-board valve in the gas line to the refrigerator.
4. Empty the refrigerator. Defrost and clean it as described earlier. Leave the doors of the refrigerator and the frozen food compartment ajar. Use the travel catch to hold in this position.

Equipment Details

5. When the vehicle is laid up for a long period of time (e.g during winter months), we suggest fitting the winter covers WA 120, onto the vent grills.

GENERAL INFORMATION ON ALL REFRIGERATORS

DEFROSTING

As time goes by, frost builds up on the fins. When the layer of frost is about 3mm thick, the refrigerator should be defrosted.

1. Switch off the refrigerator, as described in 'Switching off'.
2. Remove the ice cube tray and food.
3. Leave the refrigerator door open.
4. After defrosting (freezer compartment and fins free of frost), wipe the cabinet dry with a cloth.
5. Use a cloth to mop up the water from the freezer compartment.
6. Switch the refrigerator back on again.

The layer of ice must never be removed forcibly, nor may defrosting be accelerated using a heat source.

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.

STORING FOOD

Always store food in sealed containers, aluminium foil or similar.

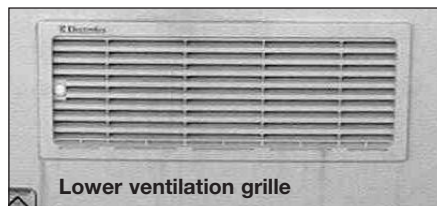
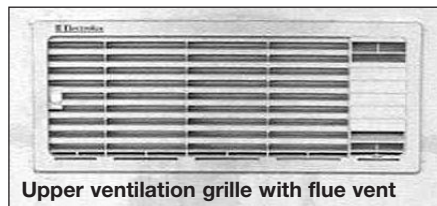
Never put hot food into the refrigerator; always let it cool first.

Products that could emit volatile, flammable gases must not be stored in the refrigerator.

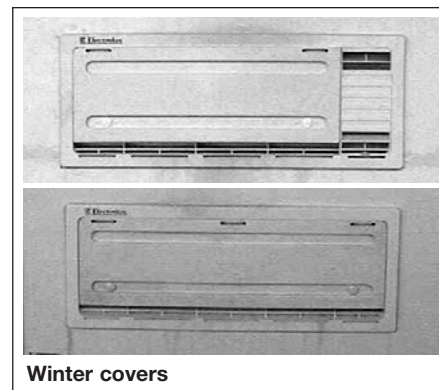
The two-star freezer compartment is suitable for making ice cubes and for short-term storage of frozen food. It is not suitable as a means of freezing foods.

WINTER OPERATION

1. Check that the ventilation grills and the extractor have not been blocked by snow leaves or similar.



2. When the ambient temperature falls below 8°C, the optional (not supplied) winter covers should be fitted. This protects the unit from excessively cold air.



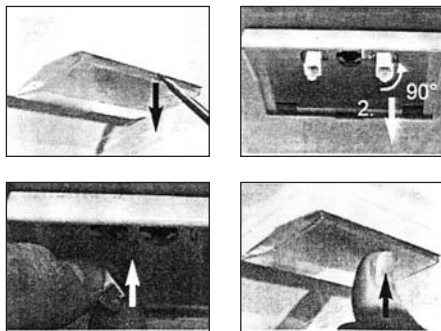
3. Affix the cover and fasten it



It is also recommended that the winter covers should be used when the vehicle is taken out of service for an extended period of time

INTERIOR LIGHT (WHEN FITTED)

Changing the light bulbs



1. Remove cover.
2. Detach defective light bulb.
3. Fit new light bulb.
4. Clip the cover back in place.

Note: for 12V DC: 1 light bulb 8V, 2W for 24V DC: 2 light bulbs 28V, 1.5W

Please contact Electrolux Service centres for replacement light bulbs.

ENVIRONMENTAL HINTS

Refrigerators manufactured by Electrolux GmbH are CFC-free. Ammonia (a natural compound of hydrogen and nitrogen) is used in the cooling unit as a coolant, the non-ozone-hazardous cyclopentan is used as a propellant in the manufacture of the PU foam insulation.

DISPOSAL

In order to ensure that the recyclable packaging materials are re-used, these should be sent to the usual 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 approx. 25°C, it is sufficient to operate the refrigerator at the middle thermostat setting (for both gas and mains voltage).

Where possible, always store goods that have previously been cooled.

Do not position the refrigerator in direct sunlight.

Constant circulation of air must be supplied to the refrigerator unit.

Defrost regularly.

Open the door only for a short time when removing goods from the refrigerator.

Run the refrigerator for about 12 hours before filling it.

TRAVEL CATCH

All models are fitted with a travel catch to keep the refrigerator door securely closed when the vehicle is on the move. Remember always to push the catch down so that its lower end fully engages the plastic bush in the top of the door, before moving off.

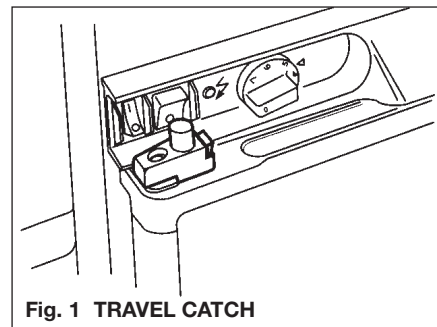


Fig. 1 TRAVEL CATCH

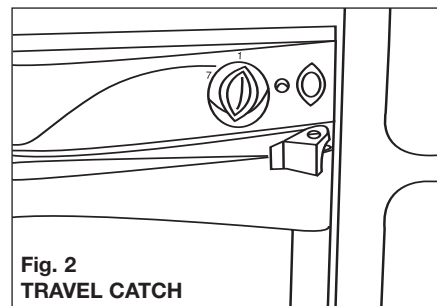


Fig. 2 TRAVEL CATCH

Equipment Details

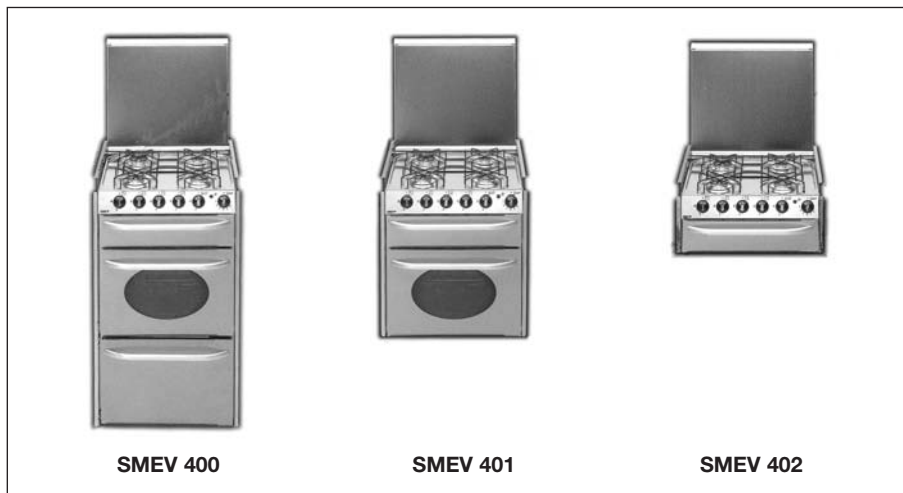
SMEV 400 SERIES COOKER

OPERATION

CAUTION:

- This appliance must only be used by responsible adult people.
- During and immediately after use accessible parts may be hot; do not touch them and keep children away.
- Once cooking is completed, ensure that all gas control knobs are turned to the closed position.
- After use turn off the gas at the main supply.
- Glass lids may shatter when heated. Turn all the burners off before closing the lid.
- Cooking facilities must not be used to heat the environment.
- Keep combustible materials away from the appliance.
- Use protection gloves when handling hot elements.
- Never lay Pyrex lids or other items on the burners.

The use of a gas cooking appliance results in the production of heat and moisture in the room in which it is installed. Ensure that the kitchen is well ventilated; keep natural ventilation holes open or install a mechanical



ventilation device (mechanical extractor hood). Prolonged intensive use of the appliance may call for additional ventilation, for example opening of a window, or more effective ventilation, for example increasing the level of the mechanical ventilation where present.

In the event of the burner flame being accidentally extinguished, turn off the burner control knob and do not attempt to re-ignite the burner for at least one minute.

Place the pan centrally on the burner so that it is stable on the pan support.

APPLIANCE IGNITION

1. MANUAL HOTPLATE IGNITION

- a. Push control knob in slightly, turn to ignition position (large flame symbol). Light burner with match or lighter keeping the control knob pressed in for 3-5 seconds.
- b. Release knob and turn to the required heat setting (large or small flame symbol)

2. AUTOMATIC HOTPLATE IGNITION

- a. Push control knob in slightly, turn to ignition position (large flame symbol).

Equipment Details

Ignite the burner by pressing the ignition button, keep the control knob pressed in for 3-5 seconds.

- b. Release knob and turn to the required heat setting (large or small flame symbol).

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.

CAUTION: IGNITE OVEN AND GRILL BURNER WITH DOOR COMPLETELY OPEN ONLY.

IMPORTANT: If ignition is unsuccessful, repeat the operation from the beginning. If ignition is still not possible have the appliance checked to ensure that there is gas and/or electrical supply. If the unit still fails to ignite turn the gas off at the main supply and contact the retailer.

GRILL OPERATION

Before using the grill for the first time, let it run at maximum temperature for the duration of 15 minutes.

For best results it is advisable to preheat the grill for a few minutes.

CAUTION: WHEN GRILLING, GRILL COMPARTMENT DOOR MUST BE LEFT COMPLETELY OPEN.

DURING AND IMMEDIATELY AFTER USE ACCESSIBLE PARTS MAY BE HOT; DO NOT TOUCH THEM AND KEEP CHILDREN AWAY.

GLASS LIDS MAY SHATTER WHEN HEATED. TURN ALL THE BURNERS OFF BEFORE CLOSING THE LID

During grill operation, do not obstruct the hole in the centre of the burners where heat and smoke can come out.

OVEN OPERATION

Oven burner will not ignite if door is not completely open.

Before using oven for the first time, let it run at maximum temperature for the duration of 30 minutes, without foodstuffs inside.

For ovens with thermostat the different positions of the knob correspond to the following temperatures in °C of the oven.

POSITION	1	2	3	4	5	6
TEMP	130	160	180	200	220	240

GAS CYLINDER

The appliance must be connected to a gas cylinder that operates at the same working pressure to that which the appliance is designed. Check the data plate affixed to the appliance.

THE USE OF A TYPE OF GAS AND/OR OF A PRESSURE DIFFERENT FROM THOSE PRESCRIBED BY SMEV, CAN CAUSE IRREGULAR OPERATING CONDITIONS OF THE APPLIANCE; FOR THIS REASON, SMEV DECLINES ANY RESPONSIBILITY ORIGINATING FROM INCORRECT USE OF THE APPLIANCE ITSELF.

Observe the following instructions:

Gas cylinders must be placed in the compartment assigned for the purpose, in a vertical position with the valves and pressure reducers fitted and access unobstructed. It must also be possible to replace the cylinders easily and without obstruction.

AFTER USE, ALWAYS SHUT OFF THE GAS SUPPLY FROM THE CYLINDER

Equipment Details

ATTENTION! When replacing the gas cylinder, the following precautions must be taken:

- a. Close tapes to the appliance (pos.●);
- b. Make sure there are no flames or fires lit in the proximity;
- c. Close valve of cylinder to be replaced;
- d. Unscrew regulator from empty cylinder and remove from its storage compartment. Reverse procedure for replacement. Check possible gas leaks by means of a soapy solution as described above.
- e. Ignite burners and check correct operation. Contact an authorised technician if the unit shows signs of failure.

GAS LEAKS

We recommend using an approved electronic detector for gas leaks.

If you smell gas:

- a. Open window and immediately get all people out of the motorhome.
- b. Do not touch electrical switches, light matches or do anything that could ignite gas.
- c. Extinguish any open flame.

- d. Close cylinder or tank supply valves. Do not turn on valves until leak has been corrected.
- e. Immediately call an authorised serviceman.

CLEANING AND MAINTENANCE

Turn off the appliance and allow to cool before cleaning. Cold water or a damp cloth may damage hot surfaces.

Do not use abrasive, corrosive, chloride-based products or steel pads. Do not leave acidic or alkaline substances e.g. vinegar, salt, lemon juice etc, on the appliance surfaces.

Stainless steel surfaces and enamelled parts should only be washed with soapy water or neutral detergent, rinsed and dried. Only use clean sponges or cloths.

STOVES HOBS, GRILLS AND OVENS

BURNER IGNITION

The hotplate lid must be open for the hotplate, grill or oven burners to ignite.

The ignition should not be operated for more than 15 seconds. If, after 15 seconds the burner has not lit, stop operating the ignition, open the compartment door and wait at least 1 minute before attempting to ignite the burner.

In the event of the burner flames being accidentally extinguished, turn off the burner control and do not attempt to re-light the burner for at least 1 minute.

SPARE PARTS

When ordering spare parts, please give the following information so the appliance can be correctly identified:

1. The name of the appliance from the fascia, and its colour.
2. The model number and the serial number of the appliance (from the data badge).

BE SAFE - NOT SORRY

Warning: Good ventilation is essential to the continuing safe operation of all gas appliances. Do not allow any ventilation openings to become accidentally or deliberately blocked.

Equipment Details

Keep all flammable materials (such as curtains, furnishings, towels and clothing) away from the appliance.

Parts of the appliance may be hot during or immediately after use. Allow sufficient time for the appliance to cool after switching off.

When opening the appliance door, take care to avoid skin contact with any steam which may escape from the cooking.

Do not use aluminium foil to cover the grill pan, or put items wrapped in foil under the grill as this can create a fire hazard.

Do not use the oven with the door inner glass panel removed (glass oven doors only).

If the cooker has a storage compartment below the oven, this should only be used to store oven furniture. Do not store any flammable materials in this compartment.

When cooking with fat or oil, never leave unattended.

Turn pan handles inwards so they are out of reach of children and cannot be caught accidentally.

Glass lids may shatter when heated, turn off all burners before shutting the lid.

Models without ignition button: For safety reasons, we recommend the use of a hand held spark igniter or gas lighter to ignite the burner, rather than a match or taper, which could allow burning debris to fall behind the appliance.

When you have finished cooking, check that all controls are in the off position.

THE HOB

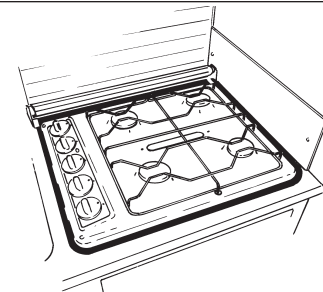
Caution:

- Do not use foil on the hob, as it creates a fire hazard
- Glass lids may shatter when heated, turn off all burners before shutting the lid
- Note: When positioning the pan support, ensure that the fingers are central to the burners (Fig 1).

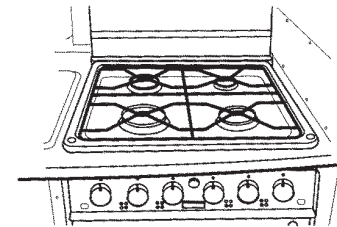
Always use the most appropriate size of burner for the pan you wish to use. Use pans with a flat base of minimum 100mm/4 ins diameter, and maximum 200mm/8 ins diameter, which are stable in use. Avoid odd or misshapen pans as these may cause instability.

Important: Any spillage of liquid should be cleaned away immediately to reduce the risk of fluid entering the appliance.

Ignition - Push in the control knob and turn anticlockwise to the large flame symbol. Keep the knob depressed, and press the ignition button (if fitted), or use a hand held spark igniter or gas lighter. The knob must be held in for 15-20 seconds before releasing.



Stoves Hob



Stoves Hob

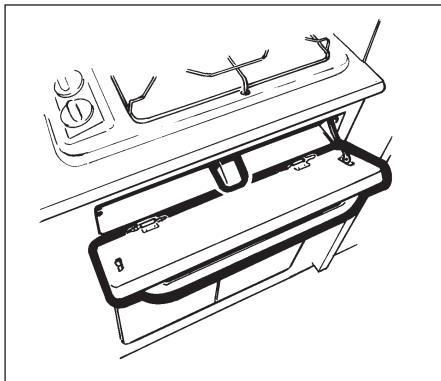
ELECTRIC HOTPLATES

Before using for the first time, prime the hotplate - switch it on without a pan to harden and burn off the coating. Use a medium-high setting for 3 - 5 minutes. A non-toxic smoke may occur.

To switch on, turn the hotplate control knob to the required setting.

Equipment Details

The high speed hotplate ring (if fitted) is identified by its central red spot - this ring has a faster response time.



THE GRILL

- Note: The door must be open when the grill is used.
- Caution: When the grill is being used, accessible parts may be hot; young children should be kept away.
- Never cover the grill pan or grid with cooking foil, or allow fat to build up in the grill pan as this creates a fire hazard.
- Keep all flammable material away from the appliance.

To light the grill

Push in the control knob and turn anticlockwise to the large flame symbol. Keep the knob depressed, and press the ignition button (if fitted), or use a hand held spark igniter or gas lighter. The knob must be held in for 15-20 seconds before releasing.

Detachable grill handle (if supplied)

Place the handle (shield uppermost) over the edge of the grill pan at the recess and slide along to position centrally between the two locator bumps. To remove the handle, place the grill pan down, and lift the handle slightly as you slide it along the recess.

Using the grill

Push in the grill pan until it locates centrally under the grill burner

There are three different grilling positions as the trivet can be inverted to give a high or low position or it may be removed.

1. The high trivet position is suitable for toasting bread.
2. The low trivet position is suitable for grilling all types of meat.
3. With the trivet removed the food is placed directly on the base of the grill pan, eg; when cooking dishes such as whole fish.

Always preheat the grill for 3 minutes for best results.

When you have finished grilling, check the control knob is in the off position

THE OVEN

Caution: When you are cooking, keep children away from the vicinity of the oven.

- **Important:** A safety device stops the ignition being used when the oven door is closed.
- Do no use foil on the oven shelves as this creates a fire hazard, and can hinder circulation of heat.
- Keep all flammable material away from the appliance.

To light the oven

1. Open the oven door and turn the control knob anticlockwise to the required gas mark. Push in and hold in the control knob, and either press the ignition button (if fitted) or use a hand held spark igniter or gas lighter.
2. Once the burner has lit, close the oven door and hold the knob in for 15-20 seconds.
3. If the flame goes out, the flame sensing device cuts off the gas supply to the burner. To light the oven again, wait for 3 minutes then repeat the above procedure.

To turn off - Push in the control knob and turn clockwise.

Equipment Details

Preheating

The oven must be preheated for 10 minutes when reheating frozen or chilled food, and we recommend preheating for all yeast mixtures, batters, soufflés and whisked sponges.

Using the oven

The shelf positions in the oven can be altered. If you prefer darker cooked results, cook on a higher shelf. For paler results use a lower shelf.

The cake tray and roasting tin that are supplied with this appliance are the largest which can be used for good results and even baking. Extra shelves, tins or trays can be ordered from your supplier.

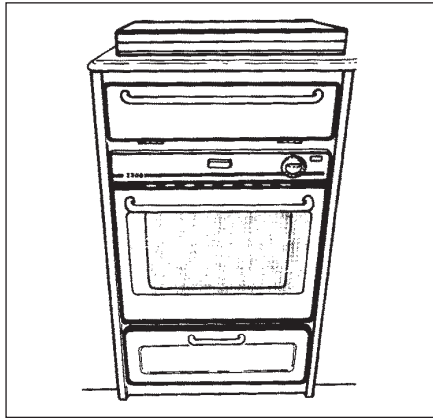
Place food items on the tray and position the tray on the centre of the shelf, leaving one clear shelf position between shelves to allow for circulation of air.

CLEANING

Caution: Any cleaning agent used incorrectly may damage the appliance.

Always let the appliance cool before cleaning.

Some cooking operations generate a considerable amount of grease. This combined with spillage can become a hazard if allowed to accumulate on the appliance through lack of cleaning. In extreme cases this may amount to misuse of the appliance and could invalidate your guarantee.



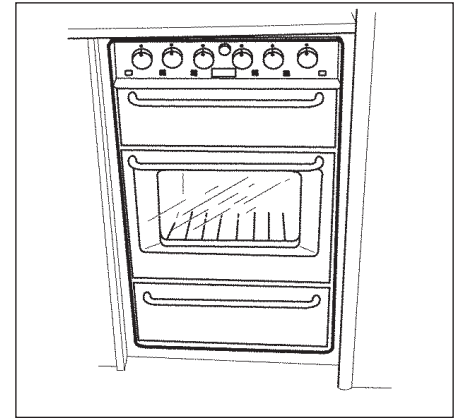
Do not use caustic pastes, abrasive cleaning powders, coarse wire wool or any hard implements as they will damage the surfaces.

All parts of the appliance can be safely cleaned with a cloth wrung out in hot soapy water.

Burner caps and heads

Important: Allow burners to cool before cleaning.

Caution: Hotplate burners can be damaged by soaking, automatic dishwashers (or dishwasher powders/liquids), caustic pastes, hard implements, coarse wire wool and abrasive cleaning pastes.



For the burners to work safely, the slots in the burner head, where the flames burn, need to be kept clear of deposit. Clean with a nylon brush, rinse and dry thoroughly.

Clean with a mild cream cleaner eg; Jif, or use a moist soapy Brillo pad.

Note: Fixed burners (if fitted): Some versions incorporate fixed burners. These burners are secured to the hob with 2 screws. Fixed burners must be cleaned whilst in position. Make sure that the gap between the burner and the hotplate does not become blocked with grease.

Equipment Details

Glass parts (if fitted)

DOOR PANELS, FACIA PANEL,
HOTPLATE LID

Do not use abrasive cleaners or polishes. Use a mild cream cleaner, eg; Jif. Rinse thoroughly and dry with a soft cloth.

The inner door glass panel can be removed for cleaning; open the door wide, hold the bottom and top edges and slide out. When replacing the glass panel, hold it level and straight with the grooves in the door trims before sliding back in.

Painted, plastic and gold coloured parts

DOOR FRAME & HANDLES, CONTROL
KNOBS

Only use a clean cloth wrung out in hot soapy water.

Vitreous enamel parts

GRILL PAN, HEATGUARD, OVEN/GRILL
COMPARTMENT(S), HOB SPILLAGE WELL,
PAN SUPPORTS

Use a mild cream cleaner. Look for one that has the Vitreous Enamel Council's recommendation seal, eg; Jif.

Chrome plated parts (Fig 1)

GRILL GRID, SHELVES, SHELF RUNNERS

Do not use abrasives or polishes. Use a moist soap pad, eg; Brillo. Shelf runners can be removed for cleaning. Grasp the runners

and slide out of the hanging holes as shown in fig 1.

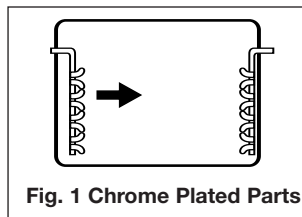


Fig. 1 Chrome Plated Parts

Stainless steel surfaces (stainless steel models only)

Only use a clean cloth wrung out in hot soapy water, and dry with a soft cloth. Do not use undiluted bleach or any products containing chlorides as they can permanently damage the steel.

Some foods are corrosive, eg; vinegar, fruit juices and salt, and they can mark or damage stainless steel if they are left on the surface for any length of time. Wipe any spillage immediately.

Sharp objects can mark the surface of stainless steel but will become less noticeable with time.

Electric hotplates

Important: Ensure that elements are switched off and cool before cleaning

For normal cleaning use a clean damp cloth. For heavy cleaning, use a clean damp cloth or scouring pad with a cream cleaner.

Follow the circular grooved pattern on the hotplate. Rinse off any cleansing agent thoroughly, then switch on to a low-medium setting for few minutes to dry. When cleaning take care to avoid the red dot on the high speed hotplate (if fitted).

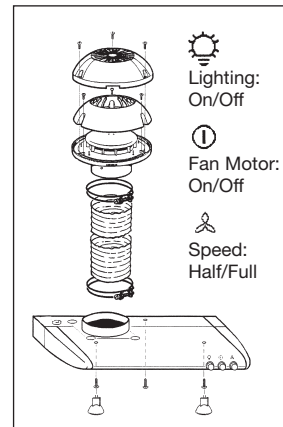
DOMETIC EXTRACTOR FAN

The fan filter

The fan filter that absorbs grease in cooking fumes requires cleaning now and then. Exactly how often will of course depend on how much the cooker is used and for how long the fan is in operation. Do not wait until the suction power of the fan begins to decrease noticeably.

Cleaning can easily be carried out with hot water to which some synthetic detergent has been added.

To remove filter hold tab on right hand side of filter and push to left whilst pulling down. To refit put left hand end into recess then push up to engage lugs in slots in body.



THETFORD CASSETTE PORTA POTTI

INTRODUCTION

The Cassette Porta Potti is constructed of high quality plastics for durability and has a high gloss finish that is easy to clean and maintain. The unit consists of two sections, a permanently installed toilet system and a slide out waste holding tank — CASSETTE.

The toilet section includes a seat and cover, flush and valve blade opener knob, toilet tissue compartment and holder, waste level indicator, built-in toilet fluid storage compartment, a drip tray — a drain tube assembly and a fresh water tank.

The unique Cassette section is located underneath the toilet and is removed for emptying from outside the caravan through an access door. A rotating pour-out spout, automatic holding tank vent, air release valve, valve blade, carrying handles and hand grips are incorporated into the Cassette.

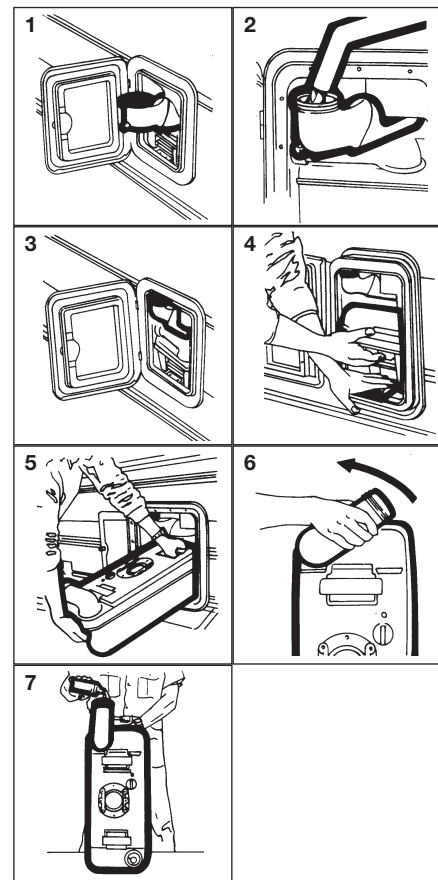
PREPARING FOR USE

1. Open access door on the side of the caravan and swing out fresh water fill funnel.
2. Fill fresh water tank using a hose or jerrycan until water funnel level reaches neck. Tank capacity is 15 litres. Aqua Rinse may be added to improve cleaning of bowl and flushing of unit.

3. Replace cap. Swing water fill funnel inward until it touches side of water tank.
Note: 150ml of water will remain in fill bottle when fresh water tank is empty.
4. Next add Aqua Kem to Cassette for controlling odours. Depress retaining clip.
5. Remove cassette by pulling straight out. When Cassette hits stop, tilt downward slightly and remove (stop for safety when Cassette is full).
6. Position tank vertical and swivel pour out spout upward.
7. Remove cap. Remove deodourant from storage compartment. Add 100ml of Aqua Kem or 120ml of Aqua Kem Bio through pour out spout. Add small amount of water through spout to cover tank bottom. Replace cap and return pour out spout to its original stored position.

Note: As an alternative deodourant can be added to Cassette through the valve blade opening. Hotter weather or longer retention time may require addition of more Aqua Kem.

CAUTION: Do not add Aqua Kem Concentrate or Aqua Kem Bio directly into toilet bowl while Cassette tank valve blade is closed. Pressure due to heat and altitude change can build up in the Cassette tank causing bowl contents to splash upward upon opening the valve blade, if opened too fast. Before each use, open and shut the Cassette valve blade to vent the tank



Equipment Details

8. Slide the Cassette, pour out spout facing outside into the caravan through access door. Never force insertion or removal of the Cassette tank, damage to system can occur.
9. Make sure the Cassette is secured by the retaining clip. Close and lock access door.

OPERATION

Flushing (Electric Models)

10. Before using the toilet we advise to add some water to the bowl by pressing down the flush knob. This avoids marking the bowl. Water will stop flowing when knob is released.
11. To flush after use, press the flush knob down while turning in an anti-clockwise direction. The turning motion opens the valve blade, emptying the toilet bowl. This procedure results in the best bowl rinse and most efficient use of water. After flushing, turn the knob in a clockwise direction to close the valve blade. The toilet can also be used with valve blade open, which allows the waste to go directly into the holding tank.

Flushing (Manual Models)

10. Before using the toilet, we advise you to add some water to the bowl by turning the flush knob in clockwise direction. When flush knob is released it will turn automatically back.

11. To flush after use, turn the valve knob in anti-clockwise direction and turn the flush knob. This procedure results in the best bowl rinse and most efficient use of water.

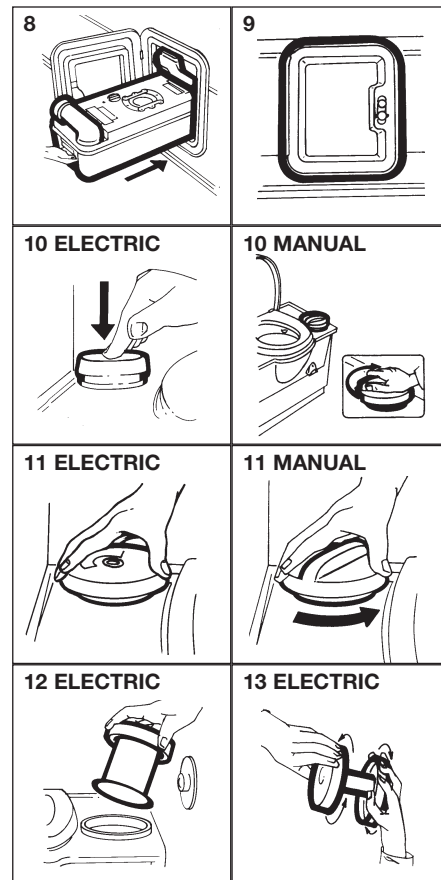
TOILET TISSUE

12. Toilet tissue is stored in the specially designed storage compartment that helps keep tissue clean and dry (electric models only). Tissue can also be suspended on a tissue holder using the special wall mount bracket, if desired.
13. To replace tissue, remove tissue holder from compartment by pulling up on tissue cover. Hold bottom of tissue holder in one hand and cover in the other, and turn in opposite directions until you hear a click. Pull apart. Place tissue on holder, insert prongs of cover into holder. Hold cover and holder and twist in opposite direction until locked. Aqua Soft toilet tissue is recommended for best results.

Emptying the Cassette

The Cassette capacity is 20 litres and should be emptied when the waste level gauge indicator goes from green to full red.

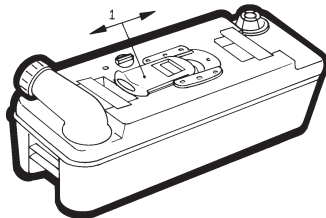
The gauge does not begin to move from green to red until the tank is over half full.



Equipment Details

Caution: Do not allow Cassette to become overfilled, see Trouble Shooting section for emergency emptying procedure.

The holding tank features a unique sliding cover (1) which guarantees optimal hygiene. The sliding cover moves automatically when the holding tank is inserted. When holding tank is removed, the cover automatically assumes its correct position. To clean the holding tank, you may remove the cover manually by sliding it towards the pour-out spout.



To empty Cassette be sure that the valve blade is in the closed position.

14. Open the access door on side of caravan.
Depress the retainer clip, pull Cassette until stop, tilt and remove Cassette.
15. Carry the Cassette using the lower carrying handle, pour out spout up, to a normal household type toilet or other authorised disposal point. Set Cassette in vertical position on the ground and rotate pour out spout upward.

16. Remove spout cap. Grasp unit by upper carrying handle nearest to pour out spout. Place other hand on upper rear grip so that the air relief valve button can be depressed with thumb while emptying, to ensure smooth outflow of tank contents. When empty, rinse tank and valve blade with water.

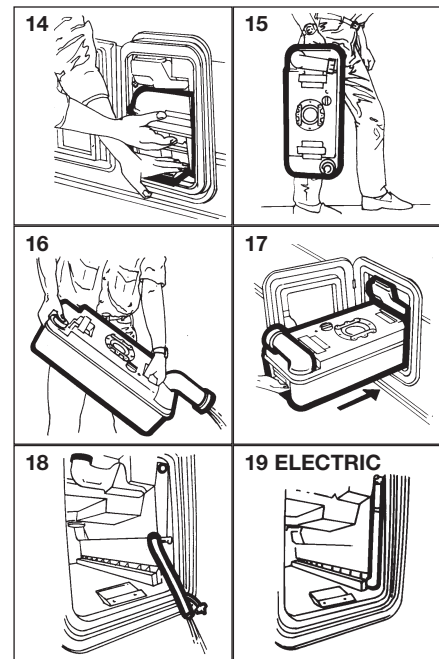
Note: Depress air release valve button only when pour out spout is pointed downwards.

17. After preparing for use, slide the Cassette into the caravan. Check to make sure that the retaining clip secures the tank in a locked position. The pour out spout end of the tank should be visible through the access door opening. Add water to the fresh water tank as outlined in "Preparing for Use" section. Close and lock access door.

CLEANING AND MAINTENANCE

No routine maintenance is required on the Thetford Cassette Porta Potti. The use of Aqua Rinse helps to clean and protect the toilet bowl, valve blade and seals during flushing. Do not use strong household detergents or cleaners with chlorine, solvents or acid contents, as they will damage valve seals.

Empty Cassette and rinse tank with clear water. Use a mild soap to clean toilet bowl, seat and cover, as well as exterior of toilet



unit and Cassette. Replace tank inside caravan.

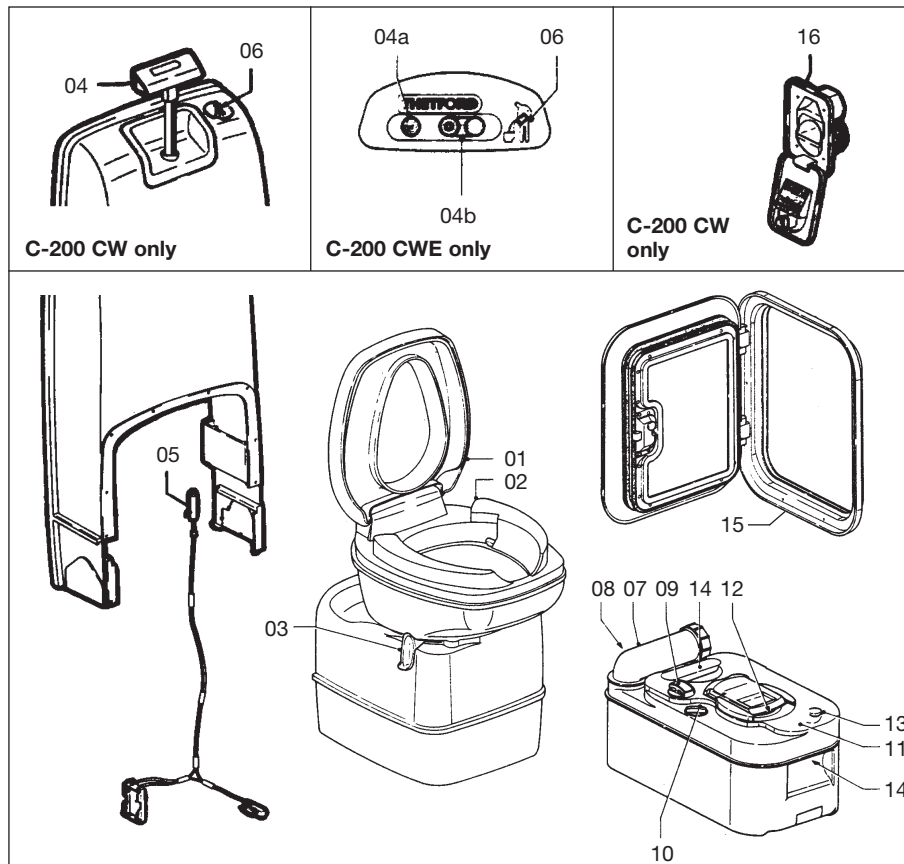
Note: Pour-out spout and vent plug can be removed. Seals should be greased if necessary with acid-free vaseline.

Equipment Details

THETFORD CASSETTE C-200 CW (Manual) and C-200 CWE (Electric)

FEATURES

1. Removable seat and cover.
2. Rotatable bowl.
3. Valve blade handle: opens and closes valve blade.
4. Flush-handle activates the flush by lifting and pushing down the handle.
- 4a **C-200 CWE.** Flush button: activates flush.
- 4b **C-200 CWE.** Valve blade buttons: open and close valve blade electronically.
5. Power-supply for the waste-level indicator: two batteries, type: Penlite 1,5V AA alkaline.
6. Waste-level indicator: indicates when holding tank requires emptying.
7. Rotating pour-out spout: makes emptying holding tank easy and convenient.
8. Upper carrying handle
9. Automatic holding tank vent: vents the holding tank when the tank is inserted in the toilet. This prevents under- or overpressure in the holding tank.
10. Valve blade opener.
11. Sliding cover: closes automatically when holding tank is taken out. Guarantees optimal hygiene.
12. Valve-blade
13. Vent button: vents the holding tank to avoid splashing while emptying.
14. Hand grip
15. Access door
16. Waterfill door



Equipment Details

CASSETTE C-200 CW AND C-200 CWE

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. Underneath the bowl, the valve blade handle is located.

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).

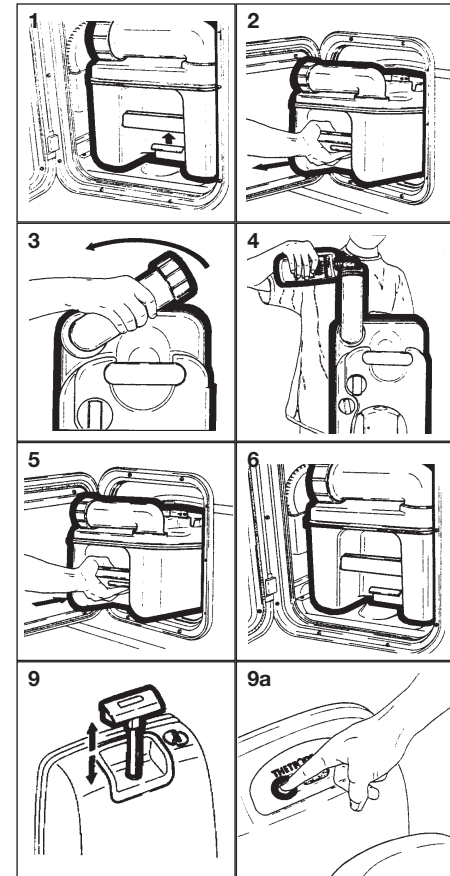
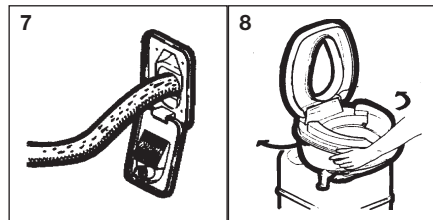
Note: Warmer weather or longer intervals between emptying the waste tank may require additional toilet fluid. Use only Thetford toilet fluid to achieve the best results.

Caution: 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).

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 only:** Before using the toilet it is recommended to flush some water into the bowl by pressing and releasing the flush button (fig. 9a).



Equipment Details

10. After use open the blade by turning the blade-handle anti-clockwise (fig. 10).
- 10a. C-200 CWE only: After use open the blade by pressing the 'open' button (fig. 10a).
11. C-200 CW only: To flush, lift the flush handle and press it down (fig. 11). After flushing, close the blade by turning the blade handle clockwise.
- 11a. C-200 CWE only: To flush press the flush button (fig. 9a). After flushing, close the blade by pressing the close button on panel (fig. 11a).

The toilet may also be used with the valve blade open, which allows the waste to pass directly into the holding tank.

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 you 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.

CAUTION: Do not allow the holding tank to become overfilled. See trouble shooting section for emergency emptying procedure.

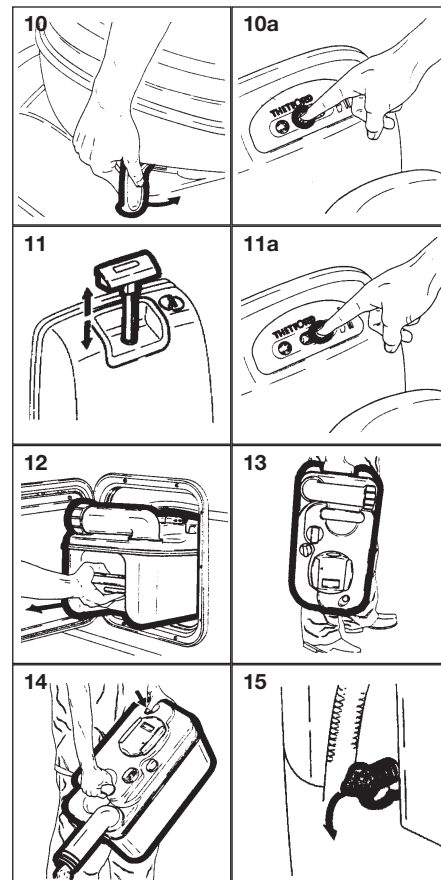
12. Open access door and remove the holding tank. The holding tank can only be removed when the valve blade is closed (fig. 12).
13. Carry the holding tank to a normal household type toilet or other authorised disposal point. Place the holding tank in vertical position and rotate pour-out spout upwards (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).



Equipment Details

Lipseal: Remove the sliding cover. Open the valve-blade by turning the blade-opener knob anti-clockwise. 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° anti clockwise 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 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).

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 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.

Equipment Details

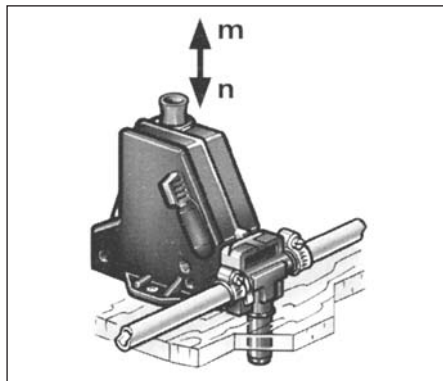
TRUMATIC C 3402, C 6002

Attention: 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!

Also drain the water prior to repair or maintenance work on the vehicle (in the workshop!) as the electrical safety/drain valve opens when the appliance is switched dead.

Electrical safety/drain valve



m = Control knob "closed"
n = Control knob "drain"

Note: The safety/drain valve is held closed by an electrical coil. To save battery power, we recommend to open the valve if the vehicle is not in use for a prolonged period.

If the temperature at the safety/drain valve is less than 4°C, the water contents may discharge on it's own accord if the appliance is not in operation (also if there is a failure). To avoid water loss, switch the device on (Summer or Winter operation) and close the safety/drain valve at the actuating button by raising it up (position m).

Without heater operation, the safety/drain valve can only be closed again at temperatures above 8°C!

The draining socket of the electrical safety/drain valve must always be kept clear (free from slush, ice, leaves etc.)! **There shall be no guarantee claims for damage caused by frost!**

Filling the boiler

1. Close electrical safety/drain valve at the control knob by lifting up (position m).

At temperatures of around 8°C and less, switch on the heater or water heater first, to make sure the valve does not open again!

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

3. Open hot water taps in kitchen and bathroom, (set pre-selecting mixing taps or single-lever fittings to "hot"). Leave taps open until the water heater has forced out air and filled up with water and water is flowing out of the taps.

Note: If just the cold water system is being operated, without using the water heater, the heater tank also fills up with water. **In order to avoid damage by frost, the water contents must be drained by operating the safety/drain valve, also when the water heater has not been used.** As an alternative, two shut-off valves, resistant to hot water, can be fitted in front of the cold and hot water connection.

Attention: 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.

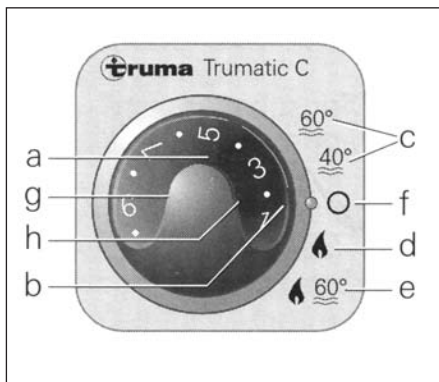
Draining the water heater

1. Interrupt power for water pump (main switch or pump switch).
2. Open hot water taps in kitchen and bathroom.
3. Open electrical safety/drain valve at control knob by pressing in (position n).

Equipment Details

The boiler is now emptied to the outside through the safety/drain valve. Place a bucket beneath the outlet to check whether the water content has completely drained away (12 litres). **There is no guarantee cover for damage caused by frost!**

GAS OPERATION (HEATING AND HOT WATER)

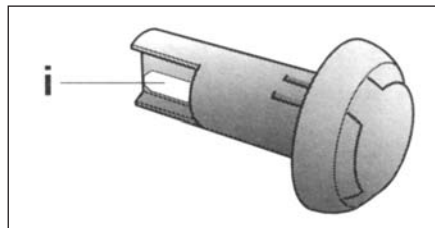


- a = Rotary switch for room temperature (1-9)
- b = Green "Operation" monitor lamp
- c = Summer operation (water temperature 40°C or 60°C)
- d = Winter operation (heating without hot water requirement)

- e = Winter operation (heating with hot water requirement)
- f = Rotary "Off" switch
- g = Yellow "Boiler heating phase" monitor lamp
- h = Red "Fault" monitor lamp

When using vehicle-specific switches: refer to operating instructions of vehicle manufacturer.

Room thermostat



- i = Room temperature sensor

To measure the room temperature, an external room temperature sensor (i) is located in the vehicle. The location of the sensor is determined individually by the vehicle manufacturer, depending on the vehicle type; consult the operating instructing for your vehicle for further details.

The thermostat setting on the operating element (1-9) 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 6-8.

Taking into operation

1. Check that the cowl is not obstructed. Always remove any covers, open deck cowl on boats.

In winter, if a roof chimney is fitted, it is recommended that a chimney extension be fitted (see Accessories). This must be removed when the vehicle is on the move. To run the chimney through the roof on a caravan, a chimney extension piece is likewise used, which must be fixed to the roof with clamp rings (see Accessories).

2. Turn on gas cylinder and open quick-acting valve in gas supply line.

Attention: Heating operation is basically possible without restriction with or without water content.

SUMMER OPERATION (HOT WATER ONLY)

Set the rotary switch to Summer operation (c), 40°C or 60°C.

Once the water temperature which has been set (40°C or 60°C) has been reached, the burner will switch off and the yellow monitor lamp (g) will go out.

Equipment Details

WINTER OPERATION

Heating **with** hot water requirement

1. Set the rotary switch (a) to the desired thermostat setting (1-9). When the system is switched on, the green monitor lamp (b) will light up, and shows the setting for the room temperature.
2. Set the rotary switch to the operational setting "e".

The device automatically selects the output stage required, depending on the temperature difference between the room temperature which has been set and the temperature at the particular time. Once the room temperature set on the operating unit has been reached, the burner switches back to the lowest stage, and heats the water content to 60°C. The yellow monitor lamp (g) indicates the heating-up phase is in progress, and goes out once the appropriate water temperature has been reached.

Heating **without** hot water requirement

1. Turn the rotary switch (a) to the desired thermostat setting (1-9). When the system is switched on, the green monitor lamp (b) will light up, and shows the setting for the room temperature.
2. Set the rotary switch to the operational setting "d".

The device automatically selects the output stage required, depending on the temperature difference between the room temperature which has been set and the temperature at the particular time. Once the room temperature set on the operating unit has been reached, the heating will switch off (regardless of the water temperature).

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.

In this operational mode, the yellow monitor lamp (g - Boiler Heat-up Phase) only lights up if the water temperature is below 5°C.

Attention: Heating operation is basically possible without restriction with or without water content.

SWITCHING OFF "GAS OPERATION"

Switch heating system off at the rotary switch (f)

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 quick-acting valve in the gas supply and turn off the gas cylinder.

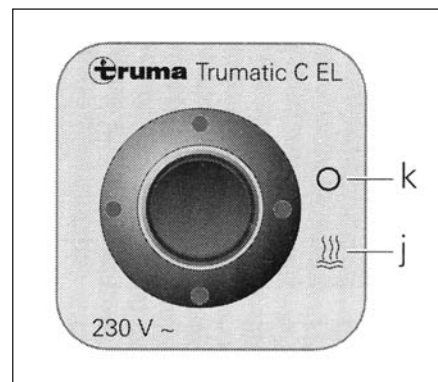
RED INDICATOR LAMP "FAILURE"

In the event of a fault, the red monitor lamp (h) will light up.

Please consult the Trouble-Shooting Instructions for possible causes.

Release is effected by switching the system off and then on again.

230 V ELECTRICAL OPERATION (450 W/2 A) - TRUMATIC C EL ONLY - (HOT WATER ONLY)



j = Rocker switch "On"

k = Rocker switch "Off"

Equipment Details

Switch boiler on at the operating point (j). The indicator lamp indicates that the device is in operation.

When using vehicle-specific switches: refer to operating instructions of vehicle manufacturer.

Note: The water temperature **cannot** be selected, automatic temperature limitation at approx. 60°C! For a faster heating up period the appliance can be simultaneously operated with gas **and** electrical power.

MAINTENANCE

The water container used is made of stainless steel, which is foodstuff-compatible.

Use wine vinegar for descaling the water heater, this being introduced into the appliance via the water supply. Allow the product to react and then thoroughly flush out the appliance with plenty of fresh water. To sterilise the water we recommend "Certisol-Argento". Other products, particularly those containing chlorine are unsuitable.

To avoid infestation by micro-organisms, the boiler must be heated to 70°C at regular intervals (only possible in winter operation).

Do not use the water as drinking water!

Fuses

The fuse for the device is located on the electronic control unit.

The fine-wire fuse must only be replaced by a fuse of the same design.

C 3402: 4 AT - slow-acting -
C 6002: 6,3 AT - slow acting -

GENERAL SAFETY NOTES

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

- Extinguish all naked flames!
- Do not smoke!
- Switch off the appliances!
- Shut off the gas cylinder!
- Open windows and door!
- Do not actuate any electrical switches!
- Have the entire system checked by an expert!

Attention: Repairs may only be carried out by an expert!

A new O-ring must always be installed after dismantling the exhaust duct!

1. Any alteration to the appliance (including exhaust duct and cowl) or the use of spare parts and accessories which are

important to the function of the heater and which are not original Truma parts, as well as the non-observance of the installation and operating instructions, will lead to the cancelling of the guarantee and exclusion of liability claims. It also becomes illegal to use the appliance, and in some countries this even makes it illegal to use the vehicle.

2. The operating pressure for the gas supply is 30 mbar (or 28 mbar butane/37 mbar propane) or 50 mbar and must correspond to the operating pressure of the appliance (see name plate).
3. Liquid gas systems must accord with the technical and administrative regulations of the particular country in which they are being used.

The **testing of the gas system** must be repeated **every two years** by a qualified specialist and, if appropriate, confirmed on the inspection certificate.

The vehicle owner is always responsible for arranging the inspection.

4. Do not operate the appliance when refuelling the vehicle and when in the garage.
5. During the initial operation of a brand new appliance (or after it has not been used for some time), a slight amount of fumes

Equipment Details

and smell may be noticed for a short while. This can be remedied by running the heater at maximum out-put and ensuring adequate room ventilation.

6. If the burner makes an unusual noise or if the flame lifts off, it is likely that the regulator is faulty and it is essential to have it checked.
7. Items sensitive to heat (e.g. spray cans) must not be stored in the installation area, since excess temperatures may under certain circumstances be incurred there.
8. For the gas system only gas pressure regulators with protection against excess pressure, such as regulators with safety valves according to EN 12864, DIN 4811 and VP 306, may be used. We recommend the Truma DUB vehicle regulator or in the case of a two cylinder gas installation that is only accessible from the outside, the Truma Triomatic automatic reserve switch-over. The Truma regulators have been specially designed for heavy-duty use in caravans, boats and vehicles. In addition to a safety valve for countering excess pressure, they also have a pressure gauge with which you can check that the installation is fully gas tight.

Always connect the pressure regulators to the gas cylinders by hand, taking great

care! For temperatures around 0°C and below, the regulators should be operated with a defroster system (Eis-Ex). Inspect regulator connection hoses regularly for signs of weakness. For winter operation only use special frost resistant hoses. Gas cylinders must always be upright!

TECHNICAL DATA

Determined in accordance with prEN or Truma test conditions

Type of gas:

Liquid gas (propane/butane)

Operating pressure:

30 or 50 mbar (refer to name plate)

Water contents: 12 Litres

Heating up time to approx. 70°C:

approx 35 min (water heater)

approx 80 min (heater + water heater)

Water pressure: max 2.8 bar

Rated thermal output:

C 3402: 2000/3400 W

C 6002: 2000/4000/6000 W

Gas consumption:

C 3402: 170 - 285 g/h

C 6002: 170 - 490 g/h

Air delivery volume

(free-blowing without hot-air pipe)

C 3402:

with 3 hot-air outlets max. 177 m3/h

with 4 hot-air outlets max. 287 m3/h

C 6002:

with 4 hot-air outlets max. 287 m3/h

Current input at 12 V:

Heater + water heater:

C 3402: 0.2 - 2.4 A

C 6002: 0.2 - 5.6 A

Heating up of water heater: 0.4 A


Stand-by: 0.001 A


Current input of electrical safety/drain valve at 12 V:

0.035 A

Weight: 17.6 kg (without water contents)

ABG test mark:

C 3402:  00

C 6002:  301

Declaration of conformity:

The Trumatic C has been DVGW-tested and complies with the EC guideline for gas appliances (90/396/EEC) as well as the associated EC guidelines. The following CE Product Ident. No. is available for EU countries:

C 3402: CE-0085AS0121

C 6002: CE-0085AS0122

The right to effect technical modifications is reserved.

TROUBLE-SHOOTING

FAULT	CAUSE	RECTIFICATION
Gas operation		
No control lamp lights up when the system is switched on (winter and summer operation).	- Device fuse or vehicle fuse defective.	- Check battery voltage (12V). Check all electrical plug connections/fuses.
The red monitor lamp flashes after the heating system has been switched on.	- Warning! Battery voltage is too low (< 10.5 V)	- Charge battery.
About 30 seconds after the heating has been switched on, the red monitor lamp lights up and remains steady.	- Gas cylinder or quick closure valve in the gas line is closed. - Air feed interrupted.	- Check gas feed. - Check cowl for possible coverage. If being used on boats open the deck cowl.
Heating switches to Fault mode after an extended period for operation.	- Hot-air outlets blocked. - Gas pressure regulator iced up.	- Check individual outlet apertures. - Use de-icing system controller (Eis-Ex).
230 V electrical operation		
No control lamp lights up when the system is switched on.	- No supply voltage.	-Check 230 V supply voltage and fuses.

Equipment Details

TROUBLE-SHOOTING

FAULT	CAUSE	RECTIFICATION
Water Supply		
<p>When the heating system is switched off, the electrical safety/drain valve opens.</p> <p>- The valve remains open even after the heating has been switched on.</p>	<p>Outside temperature below 4°C.</p> <p>No 12 V power supply at the drain valve.</p>	<p>Switch the heating on. At temperatures of about 4°C and below the drain valve will open automatically.</p> <p>Check 12 V supply voltage and fuses</p>
<p>The electrical safety/drain valve will no longer close.</p> <p>- The valve remains open even after the heating gas been switched on.</p>	<p>Outside temperature below 8°C.</p> <p>No 12 V power supply at the drain valve.</p>	<p>Switch the heating on. Without heating operation, the drain valve will not close again until temperatures above 8°C have been reached.</p> <p>Check 12 V supply voltage and fuses</p>
<p>Water dripping from the electrical safety/drain valve.</p>	<p>Water pressure too high.</p>	<p>Check pump pressure (max. 2.8 bar). If connected to a central water supply (rural or urban connection), a pressure reducer must be used, which will prevent pressures higher than 2.8 bar entering the boiler.</p>

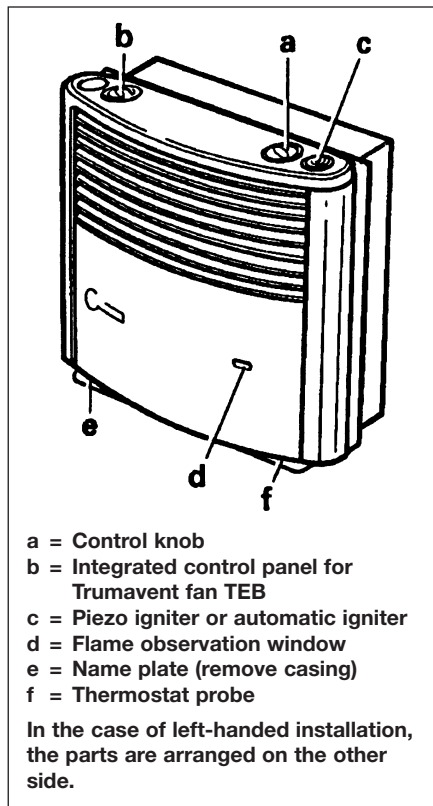
THE TRUMA S 3002 P & S 3002 AUTO SPACE HEATER

INSTRUCTIONS FOR HEATERS FITTED WITH AUTOMATIC IGNITER OR PIEZO IGNITER

Switching On

1. Open the valve on the gas cylinder. Open quick-acting valve in gas supply line.
2. Turn control knob to thermostat setting 1-10 and press it down as far as the stop. At the same time keep operating the piezo igniter rapidly until the flame ignites.
3. Keep the control knob depressed for a further 10 seconds to allow the safety pilot to operate.
4. (Piezo only) Watch through the flame observation window for another 10 seconds to make sure that the flame does not go out through air in the supply pipe (caused by the valve being closed or changing the cylinder).

Attention: Always wait at least 2 minutes before attempting to re-ignite, otherwise there is a risk of blowbacks (misfiring). This also applies if a working heater goes out has to be re-lit.



Automatic Igniter

Prior to first ignition, make sure that the batteries have been inserted; observe correct fit battery cassette (see changing batteries).

Thermostat

Set the required room temperature at the control knob (numbers 1-10). For an average room temperature of approx. 22°C we recommend setting:

- 3-5 Without the Trumavent Fan (switched on)
- 4-8 With the Trumavent Fan

Switching Off

Set control knob to "0". If turning off for a long period of time, close the quick-acting valve in the gas supply line. Close valve of gas cylinder.

Important Operating Notes

1. If the gas supply line is filled with air, it may take up to a minute before the gas becomes available for combustion. During this time depress the control knob and continuously operate the piezo igniter until the flame ignites.
2. You will have to find out the exact thermostat setting yourself, depending on how much heat you need.
3. Repairs are only to be carried out by a competent service engineer.

Equipment Details

Attention: A new O-ring must always be installed after dismantling the exhaust duct.

4. Any alteration to the appliance (including exhaust duct and cowl) or the use of spare parts and accessories, which are important to the function of the heater and which are not original Truma parts, as well as the non-observance of the installation and operating instructions, will lead to the cancelling of the guarantee and exclusion of liability claim.
5. During the initial operation of a brand new appliance, a certain amount of fumes and a slight smell may be noticed for a short while. Remedial action is to immediately run the heater at maximum output and to ensure adequate room ventilation.
6. In winter, before switching on the heater, remove all snow from the cowl.
7. Inspect the exhaust duct and all connections at regular intervals and always whenever there is a blowback (misfire). It is essential that the exhaust duct is installed so that it slopes upwards over its whole length and is securely fixed with several clamps. Never place any object on the exhaust duct, since this could result in damage. The exhaust duct connection to both the heater and the cowl must be firm and well sealed.

Do not operate heaters with incorrectly fitted or damaged exhaust ducts.

8. Never allow the warm air outlet on the heater to be obstructed in any way. For instance never hang washing on or in front of the heater to dry. Misusing your heater in this way could cause serious damage from overheating. Do not place flammable objects near the heater. Please follow these guidelines in the interest of your own safety.
9. If the burner makes an unusual noise or if the flame lifts off while burning, it is likely that the regulator is faulty and it is essential to have it checked.
10. Cleaning (with switched off appliance): It is recommended that at least once a year, before the heating season starts, you remove any dust that has collected on the heat exchanger base plate.

Technical Data:

Type of gas:	Liquid gas (propane/butane)
Operating pressure:	30mbar (28mbar butane, 37mbar propane)
Rated thermal output:	3400W
Gas consumption:	30-280 g/h
Product Ident.	No: CE-0085AP0325

Automatic Igniter

Power consumption: 50 MA (ignition)
0.01 MA
(monitoring)

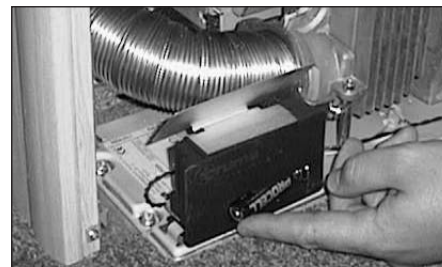
Operating voltage: 3V

CHANGING OF BATTERIES

Changing the Batteries on the Automatic Igniter

Only change the batteries with the heater switched off.

Always insert new batteries at the beginning of the heating season.



Unclip front of heater, slide up battery cover to reveal battery. Change the batteries. Observe plus/minus.

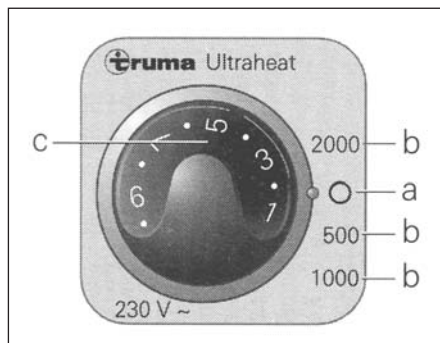
Only use temperature resistant (+70°C), leak-proof Mignon round cells (LR 6, AA, AM 3, Art. no. 30010-23600). Other batteries could lead to malfunctions!

TRUMA ULTRAHEAT ADDITIONAL ELECTRIC HEATING FOR TRUMATIC S 3002 (P), S 5002 AND S 55 T HEATERS

OPERATING INSTRUCTIONS

Before operating the heater for the first time it is essential to observe the operating instructions, enclosed with the heater.

Control panel with thermostat



- a = Rotary switch "Off"
b = Rotary switch "On"
power settings:
500 - 1000 - 2000 W

- c = Rotary control knob for room temperature (illuminated by green indicator lamp "operation")

Switching On

Attention: Before switching on, ensure that the fuse protection for the power supply of the campsite is sufficient for the selected power setting (b) (see Technical Data).

Important: The electric feed line for the caravan must be fully unwound from the cable drum.

1. To switch on, turn the rotary switch to the desired output level (b).
2. Set rotary control knob (c) to the desired room temperature.

The thermostat setting on the operating element (1-9) 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 6 - 8.

The electric heater can also be operated without the Trumavent fans.

If the heater is operated simultaneously with electricity and gas, the electrical unit will switch itself off before overheating occurs as a result of the stronger gas burner.

Switching off

Switch the heating system off at the rotary switch (a).

IMPORTANT OPERATING NOTES

1. Repairs may only be carried out by an expert.
2. The heater's hot air outlet should under no circumstances be blocked. Never hang clothes or similar in front of or on top of the heater to dry. This could cause serious damage to the heater as a result of overheating. Do not place inflammable materials near the heater! Please observe these instructions for your own safety.
3. When operating a brand-new heater for the first time (or after it has been idle for a lengthy period) you may temporarily notice a slight smoke and smell. We advise running the heater at full power and thoroughly ventilating the room.
4. Any modifications to the appliance or the use of spare parts and accessories important for operation which are not original Truma parts, or non-observance of the instructions for installation and use will result in the guarantee becoming invalid and no liability will be assumed. Furthermore the approval for operating the appliance will become invalid and in some countries also the approval for operating the vehicle.

Equipment Details

TECHNICAL DATA

Power supply: 230 V ~, 50 Hz

Power consumption at power setting:

500 W: 2.2 A

1000 W: 4.5 A

2000 W: 8.5 A

Weight: approx 2kg

BUTTERFLY OUTLETS

The butterfly plate may be opened or closed to control the quantity of air and may also be twisted around to control direction.

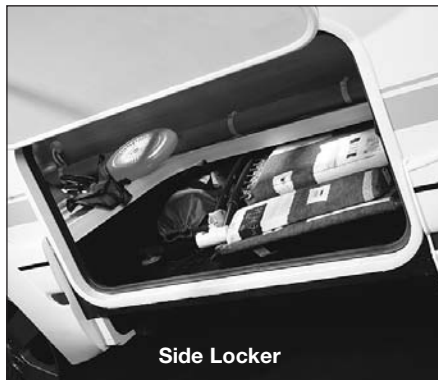
For uniform distribution, outlets nearest the heater should be closed more than those further away.



Butterfly Outlet

SIDE LOCKERS

Some models are provided with exterior access locker doors. These are suitable for storing external equipment.



Side Locker

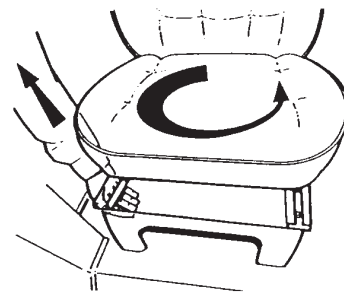
BUNK AND LUTON BED SAFETY

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: Care should be taken against the risk of falling out when this bunk is used by children, especially under 3 years of age.

SEAT SWIVEL



Front Swivel Seat

Equipment Details

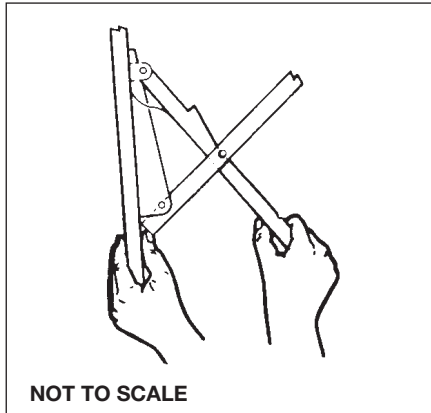
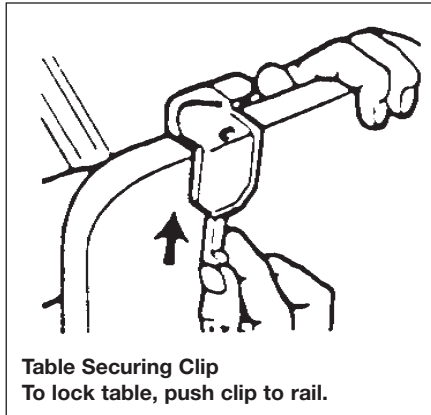
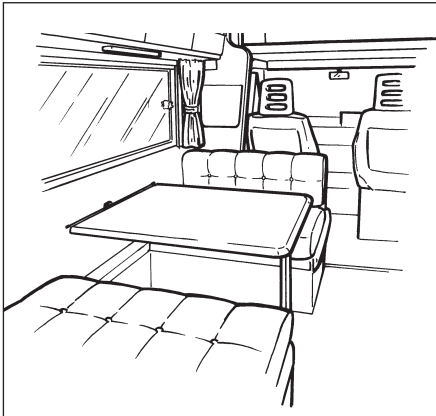
FREE STANDING TABLE

Note: The free standing table legs have a positive locking mechanism. Care must be taken to ensure that, when folded, the leg which is closed first locks into the second position.

When engaging legs in down position the mechanism must be positively locked down.

CAUTION!

When erecting the free standing table, be careful to avoid trapping fingers.



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 12,500mm² of fixed ventilation each.

WINDOWS

Some opening windows have two catch positions. The first position is for ventilation the second seals the window from ventilation and rain.

HEKI-2 ROOF LIGHT (SEITZ)

The lift/tilt roof light can be set in 3 positions by means of pneumatic springs.

Position 1 lifts the pane 12mm without allowing rain to enter the motorhome.

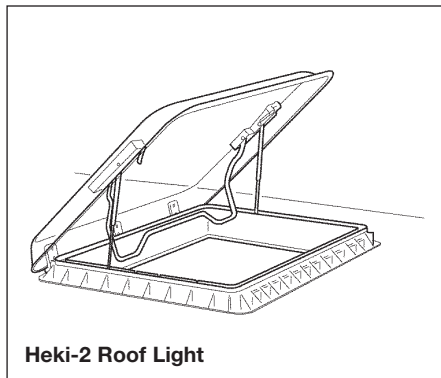
Position 2 sets the pane to a 150mm opening and locks with a bar.

Position 3 opens the pane through 55°.

A fully adjustable flyscreen and black-out screen are built into the inner frame. The flyscreen can be drawn independently and the black-out screen is variable for partial or full black-out.

Forced ventilation functions via a brush lined duct instead of a ventilated pane.

Equipment Details



A cover hood can be fitted for winter protection.

Heki-2 roof lights provide 13,200mm² of fixed ventilation.

Close the roof light completely before driving.

Do not operate whilst the vehicle is moving.

Do not stand on the roof light.

Do not leave your vehicle whilst the roof light is open.

HEKI-3 ROOF LIGHT (SEITZ)

OPERATING INSTRUCTIONS

Opening/closing the acrylic dome (Fig. 1)

To open, turn the crank until a resistance is felt (maximum opening angle - 70 degrees)

To close, turn the crank until the acrylic dome is lying flat, then turn the crank for another 2-3 turns to lock the rooflight completely. To check whether the rooflight is properly locked, try to push the acrylic dome upwards with your hand.

Opening/closing the blind and fly-net (Fig. 2)

Closing

- Pull the end rod (without the catch/blind) from the recessed part and engage it with the opposite end rod with the catch.

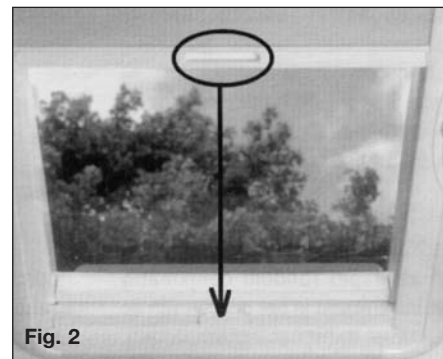
Opening

- Push the united end rods until the blind is fully extended. Press the catch and guide the blind back to its original position in the frame. (do not let the blind recoil)

Adjusting (Fig. 3)

Push the united rods until the desired setting is reached.

Attention: When there is strong sunshine, the blind should be closed only to 2/3 (the heat trapped between the blind and the acrylic dome could damage plastic components).



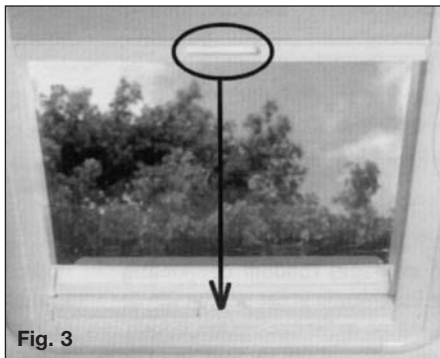


Fig. 3

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)

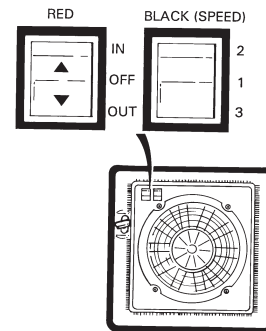
Care instructions:

- 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.

THE OMNIVENT (12V) ROOFLIGHT

The Omnivent is a double glazed rooflight constructed from a synthetic ultra-violet screened material. Its side operating mechanism allows a completely free central opening with built-in fixed ventilation when closed.

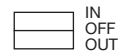
Equipment Details



Omnivent Rooflight

Red Switch = Mode of Operation

Induction (IN)
Expel (OUT)



Black Switch = Speed Control

1, 2 and 3

Omnivents give no fixed ventilation when set on induction.

SHOWER

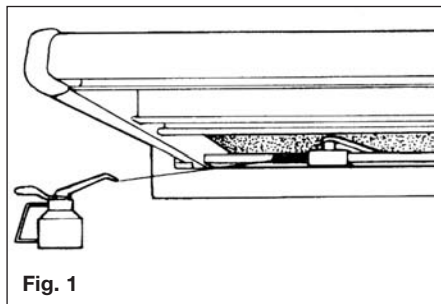
When using the shower, always ensure that the shower curtain is fully drawn thus avoiding water spray on unprotected areas.

Equipment Details

OMNISTEP SLIDE-OUT

Maintenance

Dirt and frost can prevent the slide-out step from operating efficiently. To prevent this it is essential that the rails and moving parts are cleaned and defrosted when necessary. The linkage points of the step are in a maintenance free bearing. (Fig. 1)



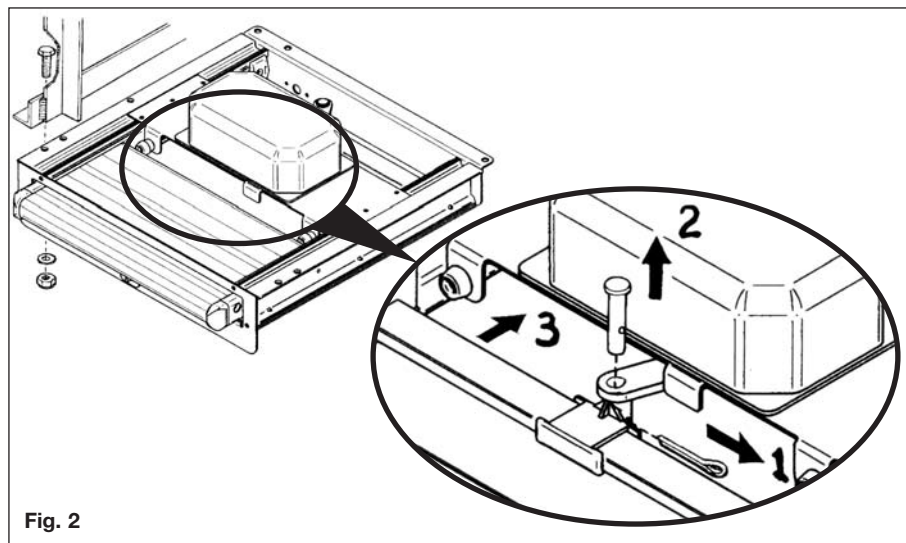
In Case of breakdown

If the step fails to retract using the motor (Fig. 2)

1. Remove the locking pin from the sliding profile.
2. Take away the axle and the washers.
3. Push the footboard in to the normal retracted position.
4. Secure the footboard with a rope to the chassis.

Current drawn

- Working current : 5 A.
- Starting current, when fully extended or retracted: 14 A.



MOTORHOME CARE

Modifications - DIY	84
Motorhome Exterior	84
Motorhome Interior	85
Chassis and Rear Axle	86
Exhaust Systems	86
Winterisation/Storage	86

Motorhome Care

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 motorhome.

Before carrying out any DIY work within the warranty period (3/5) years please check with your nearest Swift Group dealer or contact Supercare customer services on 01482 875740 for advice.

WARNING: In the interest of safety, replacement parts for an appliance shall conform to the appliance manufacturers specification and should be fitted by him or his authorised agent.

MOTORHOME EXTERIOR

PAINTWORK

The exterior of your coachbuilt motorhome is finished with glass reinforced plastic (GRP) which is very durable and easy to clean owing to its smooth finish. GRP is now used extensively in modern motorhome construction and if cared for properly will enhance the appearance of your vehicle. To maintain a showroom finish wash the motorhome regularly with a mild detergent, rinse with cold water and leather off. A good

quality, silicon free car wax may be applied which will make washing even easier.

Under no circumstances use any abrasive cleaning agents on the exterior of your motorhome. Stubborn stains may be removed by using a soft cloth and a mild detergent.

WARNING: Overzealous use of detergents may loosen the decals and/or badges.

WARNING: Care should be taken as the silicon in some polishes can attack the rubber used on the exterior for seals and gaskets.

MOULDINGS

Some mouldings are anodised aluminium and will retain their lustre for a long period if no abrasive materials are used to clean them. If your motorhome is subjected to constant changes of temperature, mastic may seep from joints between the mouldings. Any excess that appears can be removed by simply wiping with a soft cloth.

WARNING: Do not wash motorhome with a high pressure washer. These can cause permanent damage to the seals of your motorhome.

ACRYLIC WINDOWS

The windows in your motorhome are fully double glazed and with care will remain sparkling and scratch-free.

Keeping your acrylic windows sparkling:

Small Scratches: For small scratches use a liquid metal polish or a proprietary acrylic polish of a suitable grade dependent upon the severity of the scratches.

Cleaning: Wash down as you would your car. Do not use a sponge on dirty windows. When all dirt has been removed, dry with a leather or similar type cloth. The catches and stays do not require lubricating.

Removing Tar: Use a proprietary tar remover on your double glazed windows, it is obtainable from most leading car accessory or Do-It-Yourself shops. Do not use petrol or other chemicals.

MOTORHOME INTERIOR

SIDE WALLS AND ROOF LINING

A simple wipe over with a damp cloth and a very mild detergent is all that is needed.

SOFT FURNISHINGS

These 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 are dry cleaned only.

WORK SURFACES

Work surfaces are made with heat resistant tops.

Note: You should not stand very hot items on any of the work surfaces, especially models with plastic moulded sink and drainers.

CUPBOARD CATCHES

It is advisable to lightly oil all cupboard catches, sliding bolts, telescopic bed slides 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).

To improve the appearance of your shower duck board (model specific), lightly brush occasionally with vegetable oil.

CONDENSATION

Condensation will always occur when humidity inside your motorhome exceeds 60 per cent. Correct heating and ventilating of your motorhome will help to control condensation. We therefore recommend that you make sure your motorhome is heated and ventilated correctly at all times of the year, particularly in inclement or very wet weather. It will assist in reducing condensation if the windows are left in the night latch position.

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. Follow these guidelines to ensure your investment is receiving the very best attention.

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 may revert to their original positions.

Motorhome Care

CHASSIS AND REAR AXLE

Some models are built on Fiat Ducato or Peugeot Boxer base vehicles, the chassis of which has been converted by Al-Ko. This conversion provides a hot dipped galvanised steel chassis coupled with a wide track rear axle utilising steel torsion bar suspension, imparting vastly improved stability and road holding.

Al-Ko EXHAUST SYSTEM

A standard Fiat exhaust system is fitted utilising an Al-Ko modified tail pipe, available through your approved dealer.

A standard Fiat exhaust system is fitted to all other models, with the addition of a Swift Group tail pipe.

WINTERISATION/STORAGE

This is probably an opportune moment to arrange for the motorhome to have its annual service at your appointed dealer.

The following applies wherever your motorhome is stored particularly during the winter months.

Do not park near trees or larch type fences, due to possible wind damage.

Keep any grass around the floor of the motorhome short, to maintain air flow and stop any possible damp getting into the

motorhome.

It is advised that the motorhome is ventilated regularly throughout the winterisation/storage period, opening windows, doors and rooflight when possible.

General

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 the on-board battery every 2 months.

Leave the refrigerator door open.

Leave furniture doors and lockers open to allow air to circulate fully.

Soft Furnishings

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.

Wheels and Tyres

Do not store in one position with partially

deflated tyres. The tyre walls will suffer and 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.

Water System

Ensure water pump is turned off.

Lift kitchen sink unit lid and clip in open position.

All single lever mixer taps, including the shower control, should have the lever moved to the central position and lifted to the open position for hot and cold.

All conventional taps should be opened.

Remove shower head and place in the kitchen drawer. Let the shower hose drain into the shower tray and then return to holder.

Drain water tanks:

Internal tanks - open inline valve adjacent to the tank. Valve is open when handle is inline with valve.

Drain water heater:

Truma Store and Combi boilers - open yellow handle on inline valve adjacent to heater. Valve is open when yellow handle is vertical.

Motorhome Care

The Thetford Cassette porta potti is easily winterised for storage. Empty the fresh water tank using the drain tube/fresh water tank level indicator (level indicator on electronic models only). Pull the lever indicator/drain tube down from top plug position and outward through door opening to drain water from the tank.

Empty the water fill funnel by pulling the bottle away from tank. Remove the small water cap on the filler bottom, allowing water to drain from the water funnel.

Do not tighten caps, this helps in keeping unit dry.

The pour out spout and vent plug can be removed. Seals should be greased if necessary with acid-free vaseline.

Remove the drain stop plugs on the fresh water pipes. These are located through the floor on the underside of the motorhome.

If a fresh water tank is fitted, drain the tank via underfloor drain tap/plug.

Leave the drain plugs and taps open.

The motorhome may be left in this condition over winter or until ready to use. It is recommended to leave the taps in the open position during storage.

Recommissioning the Water System

Fill the fresh water tank on the Thetford Cassette porta potti (certain models only) using a hose or jerrycan until the water in the funnel reaches the neck. Tank capacity is 15 litres. Aqua Rinse may be added to improve cleaning of bowl and flushing of unit. Replace cap. Swing back the water fill funnel until it touches the water tank.

Add Aqua Kem (100 ml) into the Cassette (or 120 ml if using Aqua Kem Bio) through the pour out spout. Add small amount of water through the pour out spout and replace the cap.

Close the cold taps and ensure all the drain plugs are fitted.

It is advisable after storage to flush the water system initially with a sterilising agent (such as Milton), and then with water repeating until the system is well flushed through.

Connect the pump.

Fill the system with water until water flows freely from the hot taps. About 2 gallons of water will be required. Close the hot taps.

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 and wheels if they were removed for storage.

Important

Always follow the manufacturer's recommended procedures after use of fitted equipment in the motorhome and before storing for any length of time.

USEFUL INFORMATION

Swift Group Spares and After Sales	90
Repair Facilities	90
Caravan Clubs	91
Motoring Organisations	91
Trade Association	91

Useful Information

MOTORHOME INFORMATION

Date of purchase

Supplying dealer

CAB Chassis No

Motorhome Serial No

SWIFT GROUP SPARES AND AFTER SALES

There are numerous items available from your dealer in the specially packaged 'Swift Group Spares', ranging from door catches through to spare wheels and touch-up paints. Please note that all after sales enquiries must be directed through your supplying dealer. The after sales service at the factory is geared to support our dealer network as is the service provided by appliance manufacturers.

NB Please remember to quote your build when ordering any items from your dealer.

Swift Group Website
www.swiftleisure.co.uk

REPAIR FACILITIES

Should you be unfortunate enough to suffer a major accident with your motorhome it is comforting to know that Swift has a completely separate repair shop facility where their fully trained experts will undertake all types of major damage repair work.

Repairs of a minor nature should be referred first to your local 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:

CLUBS

The Caravan Club

East Grinstead House
East Grinstead
West Sussex RH19 1UA
Tel: 01342 326944

The Camping and Caravanning Club

Greenfields House
Westwood Way
Coventry
West Midlands
Tel: 01203 694995

MOTORING ORGANISATIONS

Automobile Association (AA)

Fanum House
Basingstoke
Hants. RG1 2EA
Tel: 0990 448866
www.theaa.co.uk
e-mail: customer.services@theaa.com

RAC Motoring Services

RAC House
M1 Cross
Brent Terrace
London NW2 1BX
Tel: 0990 722722

Green Flag National Breakdown

PO Box 300
1 Cotes Lane
Leeds LS99 2LZ
Tel: 0345 670345

TRADE ASSOCIATION

National Caravan Council

Catherine House
Victoria Road
Aldershot
Hampshire GU11 1SS
Tel: 01252 318251
www.martex.co.uk/ncc
e-mail: mail@martex.co.uk



Swift Group Limited
Dunswell Road, Cottingham,
East Yorkshire HU16 4JX
Tel: (01482) 875740
e-mail: enquiry@swiftleisure.co.uk
web site: www.swiftleisure.co.uk

© 2002 SWIFT GROUP LTD

Index

A	After Sales Support	90	G	Gas	19	S	Safety & Security	11
	Arrival at Site	13		Butane Gas	20		Seat Belts	7
	Awnings/Tents	14		Propane Gas	20		Security	12
B	Battery	28		Regulators	20		Shower	81
	Battery Charger	28		Gas Safety	21		Side Locker	78
	Before Moving Off	6		Generator Guidelines	42		Space Heaters	75
	Butterfly Outlets	78		Grills	58		Spares	90
C	Caravan Clubs	91	H	Heating	68		Spare Wheel Removal	10
	CEC 225 Unit	29		Hobs	56		Stoves Hobs, Grills and Ovens	56
	Changing a Wheel	10	L	LCD Panel over Door	30		Stoves Oven	58
	Codes of Conduct	2		Levelling the Vehicle	14		SMEV 400 Series Cooker	54
	Camp Sites	2		Loading the Vehicle	6		Swivel Seats	78
	Coastal Code	4	M	Mains Inlet Cable	23	T	Table	79
	Country Code	4		Mains Unit (CEC 225)	29		Technically Permissible Laden Mass	6
	Connecting Services	15		Motorhome Care	83		Thermal Insulation	25
	Corner Steadies	14		Chassis/Rear Axle	86		Thetford Porta Potti	61
D	DIY	84		Exhaust System	86		Toilets	61
E	Electrical Systems	27		Exterior	84		Trade Association	91
	Battery	28		Interior	85		Transformer/Charger KT12SM	30
	Battery Charger	30		Modifications	84		Travel Catch	52
	Generator Guidelines	42		Winterisation/Storage	86		Truma 3002	75
	Mains Unit	29		Motoring Organisations	91		Truma Ultraheat	77
	Power System (12V)	30	O	Omnistep Slide-Out	82		Truma Ultrastore Water Heater	44
	Transformer/Charger KT12SM	30		Overseas Connections	23		Trumatic C3402 & C6002	68
	EC200 Electronic Control System	30	P	Payload Allowance	6		Tyres	7
	Electricity	22		Positioning the Motorhome	14	U	Useful Information	89
	En Route	9		Power System (12V)	30	V	Ventilation	12
	Equipment Details	43		Preparing for the Road	5	W	Water System	16
	Equipment Power Consumption	25	R	Refrigerators	47		Water Pump (Shurflo)	44
	Extractor Fan	60		Repair Facilities	90		Weights	6
F	Fire	12		Rooflights	79		Windows	79
				Roof Loading	7		Winterisation/Storage	86
							Wiring diagrams	24



Quality with Style

SWIFT MOTORHOMES, DUNSWELL ROAD, COTTINGHAM, EAST YORKSHIRE HU16 4JX.

TEL: 01482 875740 FAX: 01482 840082

e-mail: enquiry@supercare.co.uk website: www.swiftmotorhomes.co.uk

A MEMBER OF THE SWIFT GROUP

Issued November 2002

1048640