

# REFRIGERATORS

This leaflet is prepared by The Caravan Club as part of its service to members. The contents are believed to be correct at the time of publication, but the current position may be checked with The Club's Information Office. The Club does not endorse the listed products and you should satisfy yourself as to their suitability. As always check that the installation of an after-market accessory does not invalidate your Warranty.

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Caravan refrigerators operate on the absorption principle, in which the application of heat causes a refrigerant to circulate in a closed system of pipes at the rear of the refrigerator cabinet; there are no moving parts. There is usually a choice of three heat sources - a gas flame, a mains electric element, and a 12V element, the latter being supplied from the car electrical system when the engine is running. Some modern refrigerators operate automatically, choosing the most advantageous source of energy available, and have an automatic defrosting cycle.

Before using your refrigerator, do read the operating instructions thoroughly, making sure that the thermostat is turned up sufficiently for efficient operation in hot weather conditions. Conversely, over-freezing in winter may be due to the thermostat being set too high!

## **1. Checking the Installation**

To achieve optimum efficiency, a refrigerator must be installed in accordance with its manufacturer's instructions. For instance, the refrigeration unit on the rear of the casing should be sealed off from the living area. If not, heat can collect above the refrigerator and performance will suffer.

### **You can check these points for yourself:**

- Are there draughts in the kitchen on windy days? Wind blowing through external refrigerator vents should *never* reach the interior. Draughts indicate an ineffective method of sealing.

- If your refrigerator is located below a draining board or worktop, when it is operating put your hand on the surface. Is it warm? If it is, the rear of the appliance has not been sealed off successfully.
- Look through the outer vents. If you have got one of the more recent ventilators, you might detach the grille from its frame. Peering through, you should *not* be able to see daylight in the caravan, nor inside the kitchen furniture.
- Check your ventilators have not been reduced in size nor lined with an insect gauze. Air from outside *must* be able to enter unhindered low down at the rear of the refrigerator, then pass back outside at the top.
- Note that ‘winter covers’ are not draught excluders. They prevent over-cooling and are fitted when outside temperatures fall below 10degC (50degF).
- It is possible that a ventilator kit may be helpful (see back page for details). These are not necessary if the refrigerator is correctly installed, but can compensate for a less than perfect installation.

Fortunately, even a poorly fitted refrigerator usually gives *some* cooling. But performance will be impaired, with disappointing results in hot weather. Consult your dealer if remedial work is needed

**Note:** The ventilation of the cooling unit should not be confused with the ventilation of the gases of combustion, which are exhausted to the outside using a special flue kit.

## 2. **Before you Set Off**

Moving on from installation issues, there are several things you can do to optimise performance. For example, it helps to pre-cool the food compartment before taking to the road. Load up some non-perishable items, eg bottles of mineral water, and keep the refrigerator running for three hours or more on either mains or gas.

When you later add the perishable items, ensure there is plenty of space around them. Never overpack the compartment. Finally, double-check the door catch, then switch to 12Voperating mode.

## 3. **Running on 12 Volts**

The 12V operation is for ‘on the road’ use and will only operate when the towing vehicle engine is running, but it is not a ‘second best’. On the contrary, cooling in this mode is just as good as it is on gas or mains electricity. However, remember that in 12v operation, cooling only operates at the maximum setting – there is no thermostat fitted in the 12V circuit unless you have one of the new Dometic 7 series refrigerators. Also, because of the relatively high current consumption of a refrigerator when on 12V (approximately 7 - 13 amps depending on model), mains or gas should be used whilst on site.

#### 4. On Site

**Once on site, there are several other tips to bear in mind:**

- Most older refrigerators (built prior to about 1986) should be levelled before use. The evaporator shelf in the freezer compartment is the best place to do this, either with a spirit level or a cup of water. More modern refrigerators are 'tilt tolerant' (all Thetford models to 3 degrees, and Dometic (Electrolux) to 6 degrees) so the need to level is not as critical. If in doubt, consult your dealer.
- Ensure the silvered cooling fins at the back of the food compartment are unobstructed. Their job is to absorb heat from the enclosure. Do not cover them with a pack of canned drinks or shrink-wrapped products.
- On a crowded holiday park, you sometimes get a voltage drop on mains hook-ups. A supply as low as 190V *will* affect refrigerator operation. If cooling is disappointing on mains, reverting to gas operation may improve performance. This also applies abroad, since electrical regulations may be different to those in the UK and the supply voltage may on occasions be considerably lower than 230V.
- Cover damp vegetables – especially freshly-washed lettuce. Shrink-wrapping or a plastic bag are fine. Similarly, wipe excess moisture from packets. This precaution prevents water droplets forming on the cooling fins and helps overcome condensation build-up. Both impair performance.
- If you like 'smelly' cheese, onions or aromatic food, make sure they are packed in a sealed plastic bag.
- Open your refrigerator door as briefly as possible. .

#### 5. Gas Operation

Caravan refrigerators can be operated on both types of LPG (see separate data sheet on the subject). It is important that the gas pressure shown on the data plate corresponds with your gas regulator. Because of safety risks, it is strongly recommended that you do not operate on bottled gas whilst on tow. A naked flame is prohibited at petrol stations, motorway service areas and in most tunnels.

#### 6. Ferry Crossings

It will be obvious from 3 above that the refrigerator cannot be used on 12V during ferry crossings. For short crossings of an hour or two, the contents should remain adequately cool until you are able to re-connect, provided the refrigerator was pre-cooled sufficiently beforehand. For longer journeys this is not practicable, and it is best to purchase fresh produce on arrival at your holiday destination. However, when members were asked if they had any ideas for keeping the refrigerator cool on ferry crossings, the following tips were received, which members might find helpful:

- Pre-freeze suitable items you are taking on your journey, allowing no air spaces in the refrigerator, and place in the fridge before starting your journey. The member who passed on this advice explained she put the frozen contents into the

refrigerator at 4pm and they were still frozen on arrival at 8.30am the following day (14 hours).

- Variations on this theme included freezing a cooked meal in an ice cream carton, or any square/oblong box that will fit into the freezer section – this should last about eight hours. Freeze a loaf of bread/block of cheese/milk (in plastic bottles to allow for expansion), or use freezer blocks.
- A member who often travels to Le Havre via Portsmouth, a journey of 5½ hours, keeps his fridge cold using a portable 12V supply in the form of a portable starter/charger, sold under various trade names (inc Halfords), and available from caravan dealers. Connection requires a 12S socket, a torpedo plug for 12V/car cigarette lighter sockets and a 3ft length of two-core cable. The plug should be wired to terminals 3 and 4 of the 12S socket. After leaving the ferry, remember to reconnect as normal! These engine starters are supplied with a 12V lead, which can be plugged into the car's cigarette lighter to recharge for future use. This should work fine, but it should be appreciated that as most of these engine starters have an internal battery of about 6-12Ah capacity or so, they may give only an hour or two's use; however, one of these devices will extend the time the refrigerator would remain cold – say two to three hours after the battery becomes flat.
- Fill the fridge to capacity, if possible, and avoid opening the door.

## **7. Between Trips**

Always remember to empty out the refrigerator between trips - anything left lurking can give a nasty surprise on your next outing! After disconnecting and defrosting, clean the fridge using a soft cloth and warm (not hot), weak solution of bicarbonate of soda. Finally, wipe over with a cloth and plain water and finish with a dry cloth. If something has left a strong odour in the fridge which washing alone cannot shift, try making a paste out of the bicarbonate of soda and water, and smear this in the refrigerator and leave overnight. Rinse off with warm water, clean and dry - this should cure the problem.

## **8. Winter Operation**

For Dometic and Thetford refrigerators a winter cover is available to fit over the ventilator grilles. This can be used when the refrigerator is being run on gas as well as mains. However, this may not be the case with other manufacturers' covers - if in doubt consult your dealer or caravan manufacturer. The covers help to control the performance of the refrigerator in cold conditions and should ideally be fitted when the outside (ambient) temperature is below 10°C(50°F) for Dometic refrigerators and below 8°C (46°F) for Thetford refrigerators. They should, however, be removed when not required, otherwise the performance of the refrigerator could be adversely affected, particularly in warm conditions

## **9. Servicing**

Like any gas-operated appliance, a refrigerator must be serviced at frequent intervals, and an annual service is recommended. Some owners have it done biennially and others never have the work done at all. The importance of caravan and motor caravan servicing is generally recognised, but note that a refrigerator service is not usually carried out in a standard service – only a cooling check is included on the normal job list. To find details of your local Dometic service centre telephone -01582 494111, or e-mail [info@dometic.co.uk](mailto:info@dometic.co.uk)

A full refrigerator service entails removing the refrigerator and cleaning the burners, flue, baffle and associated items. Additionally, the gas jet has to be replaced. All connections are checked, too – especially the flame-failure couplings. If these loosen, you get problems holding in the flame. Likewise, the ignition system is checked and adjusted. This should only be undertaken by a suitably qualified service engineer.

If servicing is not carried out, there is every likelihood that a rather special holiday will be marred by refrigerator failure. As bad luck will have it, this typically occurs when temperatures are tropical!

### **SOME HELPFUL HINTS:**

- 1 The refrigerator door should be left ajar when not in use.
- 2 Liquid or items with a strong odour should be well packaged.
- 3 Ensure the ventilation openings are unobstructed, and that winter covers are not used in the summer (other than for storage).
- 4 The door should be secured by means of the travel catch when the caravan is on the move.
- 5 If the refrigerator fails to work on gas, check that:
  - a) the LPG cylinder is not empty
  - b) all LP gas valves are open
  - c) other gas appliances are working.
- 6 If the refrigerator fails to work on 12V check that:
  - a) the 12V supply is connected to the refrigerator
  - b) the fuse on the 12V supply is intact
  - c) the 12V switch is on
  - d) the car engine is switched on (if relays are fitted).
- 7 If the refrigerator fails to work on 240V check that:

- a) the 240V supply is connected
- b) the 240V isolating switch is on
- c) all miniature circuit breakers/fuses are on in the RCD/fusebox
- d) the fuse is intact in the refrigerator plug or spur socket.

**Useful addresses:**

- Ventilator kit: Dometic L100 and L200 Vent System. Tel: 0844 6260130  
Dometic UK Ltd (Electrolux refrigerators)  
Dometic House, The Brewery, Blandford St Mary,  
Dorset, DT11 8LS  
Customer Helpline 01582 494111, or consult Telephone Directory white pages for  
your nearest dealer. [www.dometic.co.uk](http://www.dometic.co.uk)
- Coleman UK plc (Coleman and Camping Gaz)  
Kestrel Court, Harbour Road, Bristol, BS20 7AN  
Customer Helpline freephone number 0800 317 466. [www.campingaz.com](http://www.campingaz.com) and  
[www.coleman-eur.com](http://www.coleman-eur.com)
- Thetford Ltd (Norcold Line refrigerators – *not available as an after-market  
product at present*)  
Unit 19, Oakham Drive, Parkwood Ind Est., Rutland Rd, Sheffield, S3 9QX  
Tel. No. 0114 2738157. [www.thetford-eur.com](http://www.thetford-eur.com)