

KEEP YOUR COOL!

Pia, our new resident Techspert from Southern Spirit Campervans shares tips and invites your questions...

The fridge is your RV's most important appliance. It's also your biggest 12 V consumer and often you'll use it without wondering if it's running under ideal conditions. I could write pages about how important ventilation – and for absorber fridges, insulation – is. It's likely your fridge would benefit from another external vent and also a 12 V fan. It's also likely the 12 V wiring to your fridge is under-dimensioned and doesn't have 6 mm wire, but to make changes there we would require more serious modifications.

old & mouldy fridge sealing

Fridge 101

Compressor fridges like Waeco, Engel, Vitrifigo, etc, draw heavily from your 12 V system when under load. In normal operation the fridge compressor will 'cycle' by kicking in and out, which is how it maintains a set temperature. You will hear when your fridge compressor is running as there is a little humming noise.

Absorber (LPG) fridges like Dometic or Thetford, by comparison, work on a design that essentially exchanges heat for cold: to make a fridge cold it produces heat. Under normal conditions they operate around 40°-70°C, measured on the fridge back, and you can feel this on the outside of the cupboard around the fridge or the external vents.

Usually your fridge runs 24 hours a day and that's why you need to ensure it uses as little power as possible. A fridge, depending on size, draws between two and eight amps per hour, under load. Tip: You can find specific information on the inside label of your fridge or in your user manual. Once known you can roughly calculate how much power your fridge will use in a 24 hour period. For example, if

under full load the fridge is using 4 amps (48 Watts) and your battery is rated at 100 amp hours (AH), after 24 hours the fridge would have used 96 AH and your battery would be almost dead empty. Bear in mind a deep-cycle battery should not be run down to less than 70 per cent capacity before recharging, to ensure optimal life. In our 100 AH battery example this means you only have 30 AH of usable power, which equates to 7.5 hours fridge time. And that's not taking into account lights, the water pump or any other 12 V systems!

These figures assume the fridge engine compressor/absorber unit runs all the time. Let's see what can be easily achieved to improve fridge performance. Remember: Fridge performance impacts directly on how long you can stop without mains power when you go camping.

Fridge Seals

The seal of your fridge is very important because it makes sure the cold cannot escape, therefore requiring less power to maintain a set temperature. You can check the fridge rubber when the door is attached, but it's best done if you take the door off. Usually,



The back of a fridge can be a complex place, especially in a three-way unit like this. Clean carefully to maximise airflow and inspect wiring and any gas fittings to ensure all are in good condition.

the door is attached on a hinge that can be unscrewed, although sometimes the screw is hidden under a cover. It's important to check the rubber all around, especially along the bottom.

Your fridge seal should be soft and when pressed it must compress. Likewise, when released it should become 'thicker' again. Also, the fridge seal should be nice and clean, so check for mould, mildew, cracks and splits, and for food remains or rust particles (often found on the bottom part of the seal). If the seal still looks and feels reasonable give the rubber a good clean. Best results will be achieved if you carefully pull the rubber seal out – most are only pressed into the fridge door, not screwed in. You can clean it with a soft sponge using specific cleaner or just a white distilled vinegar diluted in warm water. You can also place the dismantled seal in a bucket with vinegar/warm water solution for 30 minutes to make the job easier.

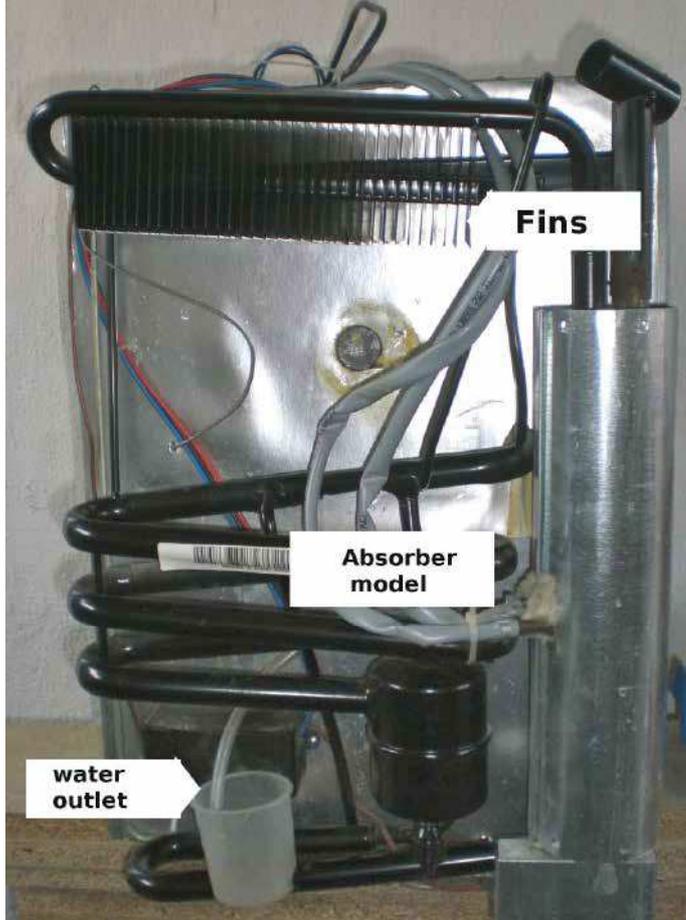
When fitting the seal back to the fridge door make sure you're not using sharp tools that might cause damage. For long life and to keep the seal soft you can treat the rubber with

some glycerine or talcum powder, which you can apply simply by wiping on. Check and maintain your seal once or twice a year. Keep it clean on a regular base just with some soapy water and a soft sponge, but don't forget the bottom even if it's harder to reach.

If the seal is damaged you should change it right away or as soon as possible. Either contact the manufacture to buy a new one or for some models you can buy the seal after-market for a much better price. One online supplier of after-market fridge seals in Australia is fridge-seal.com.au. Choose your brand from a drop-down menu and enter the model for a price check. They deliver Australia-wide and as an example a seal for a Dometic RM 2553 is \$60.00.

Clean Your Behind!

This is one for the slightly more advanced or adventurous fridge owner. Making sure the area behind your fridge is free of built-up dust, dirt, insect nests or whatever ensures maximum airflow and cooling. This in turn reduces battery load and preserves precious amp hours.



For a compressor fridge you'll need to do this from inside the vehicle. These fridges are usually set in a cupboard and in some cases have a frame that's screwed on. Alternatively, inside you'll find four to six plugs on the left and right sides, located on the internal fridge body towards the door, which covers the screws. Remove them and carefully pull the fridge out, making sure you disconnect the 12 and/or 240 V as you do so.

For absorber fridges you'll need to work from the outside and take the ventilation covers/



frames off to reach the area behind. Do not forget to seal the vent frames when putting them back on.

Once you've reached the back you'll be surprised what you find! The idea again is simply to clean, which can significantly improve the performance of your fridge. Only use a vacuum cleaner, tooth brush and a damp microfibre cloth for best results. Most important here is to clean the upper fins (silver or black) as dust and dirt can sit perfectly in between them and stop the fridge from working properly.

While cleaning you should also check the fridge's overall condition for things like rust or poor condition gas pipe fittings. Also check how thick the 12 V wiring is and if the crimps and connections are neat and tight. If everything is okay reinstall the fridge into its cupboard or replace the external covers, deepening on fridge type, and if any screws are involved I suggest replacing them with new stainless steel ones.

This check and clean-up should be done once a year, but if you've discovered something suspicious, like large rust spots or loose wiring I suggest taking some pictures and contacting your trusted RV repairer.

Ask The Techspert!

If you have any maintenance questions or problems email us at techtalk@imotorhome.com.au and we'll see what we can sort out. Please include photos as well as a description of any problems and we'll share them and the answers with all our readers.