

Fridge Conversion on an 8m Catalac

With the price of Calor gas getting higher every time you buy it, it seemed only sensible to think about using a 12 volt battery that was being charged by the solar panel and could after purchase, run the fridge for free

The fridge in use was only a small electrolux either 12 volts or calor gas and although it worked well on gas, on 12 volts you would need to connect to shore power and charger unit as it would pull as much as 6 amps, too much for the solar panel to supply. We did try it once but just ended up with flat batteries

The options were to convert the existing fridge, get one a bit bigger and convert that or purchase a new one.

Ann said she would like a larger fridge and as I did not know how reliable or effective it would be, I decided to buy a larger one on ebay and convert that.

Shopping around for a compressor I came across the Isotherm classic GE-80, unfortunately vat had just been increased but I was lucky enough to get one at the old price of just over £300. This is the smallest one they make and uses an evaporator plate of 250mm x 350mm to work on about an 80 litre size fridge.

I then looked on ebay for a second hand fridge and I could not believe the amount there were available, these were 3 way fridges to operate on gas, 12v or 240v. The prices ranged from about £0.99 to over £200, I eventually purchased one for £40 but had to go over the seven bridge to the Cardiff area to pick it up.

It was quite an old one but it cleaned up ok and I was able to test that it did work on 12v 240v and gas before doing anything else to it. I then changed the controls over from the top of the fridge to the underneath where holes are provided for this to be carried out.

It would make the job a lot easier if you were to remove all the existing pipe work and blank and seal the back off but I decided to keep mine just in case !

Before taking it down the boat I drilled a hole in the back of the fridge fairly low down, to take the 2 evaporator pipes and thermostat wire and also mount the evaporator plate at the back of the fridge using the spacers provided and 4 small self tap screws.

The size of this fridge is slightly larger than the old one so I had to cut out part of the surrounding panel with a jig saw for it to fit in.

I then found that the fridge would not go over the bunk in to the galley, so I had to remove the back pipe work and put them over separately and reassemble them in the galley.

I made up 2 wooden runners for the fridge to slide in on with a groove at the back of each for the two back feet to locate in and hold the fridge steady, I was going to fit the compressor under the fridge but found that to do so I would have had to do so before fitting the fridge or cut out some more wood work, which I was reluctant to do.

So the compressor went in the locker space under the oven on a thick piece of ply and I was able to drill a hole for all the pipe work and wires to come through. I fitted a Nasa voltage / amp meter so as to monitor every thing and the batteries are charged mainly by the large solar panel on the top of the dog house. This is approx 80 Watts and regularly charges at 2 to 3 amps but can go higher or lower as conditions dictate but this is a subject on its own !

First I fired the fridge up on gas to check it was working ok if I needed to revert to it. I then connected the thermostat and the main battery connection, the compressor started and ran so quietly you only really hear it when it shuts down. Which it did after about 4 minutes, I turned the thermostat up to max and again it ran for about 5 minutes and shut down, monitoring the amps showed a reading of between 0.4 /0.5 amps and the battery voltage drop would recover well before switching on again. On a low setting the temperature was about +5 degree's C on full setting it went to about minus 10 degree's C. Remember that the area closest to the evaporator gets the coldest !. I should have fitted it 20 years ago, it runs really well.

There is no place to make ice on this one but if you stand something against the evaporator it will freeze.



Bob Freeman 8m "Think Again"