

HEATER USING OIL COOLER

(+ EXTRA OIL COOLER WITH THERMOSTAT)

You will need:

An oil cooler from a 2CV/Dyane - this will probably need unclogging to get a reasonable airflow through it!

A heater fan - eg. from a Citroen GS.

A 4 pint plastic milk bottle (like your mum buys at Tesco - please check with her that it's all right to use it and make sure it's empty).

About 3m of 10mm central heating pipe.

Rubber hose that will take the oil pressure and that fits the above 10mm pipe - I've found servo pipe (marked 15 bar, I think) has been fine.

Jubilee clips to fit the rubber hose.

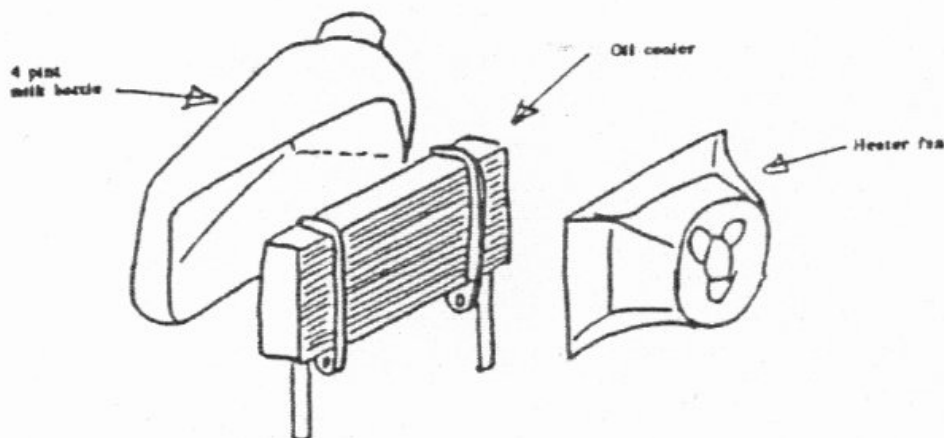
Fibre glass and resin.

Some plastic heater trunking.

Some wire and a switch!

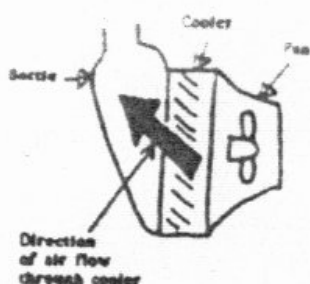
(What, no sticky backed plastic? - disappointed Valerie Singleton)

Construction:



Cut the bottle something like this to fit the back of the oil cooler:





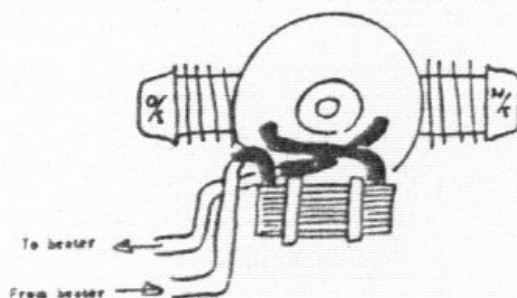
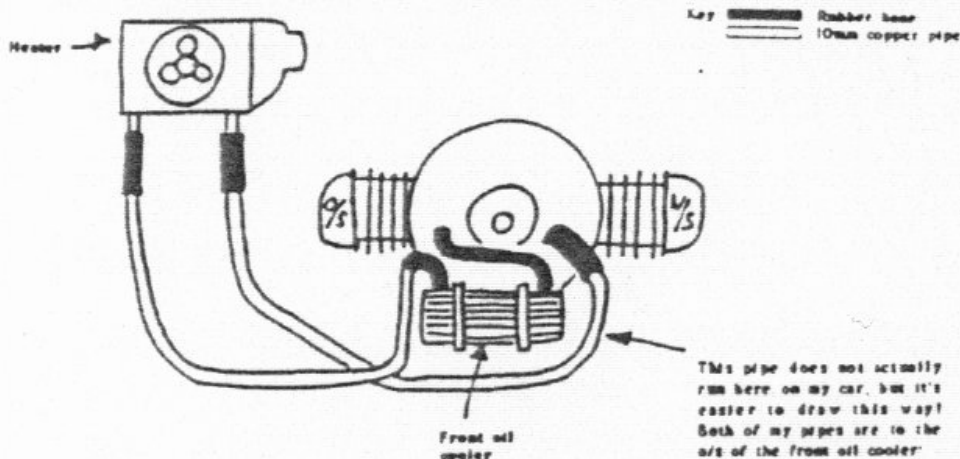
NOTE: The oil cooler fins direct the air at an angle. Determine which way sends the air towards the opening in the bottle before bonding the lot together.

I also bonded a metal tube (actually an aerosol can lid with its end cut off) onto the bottle to make a firmer outlet for the heater trunking.

Fitting:

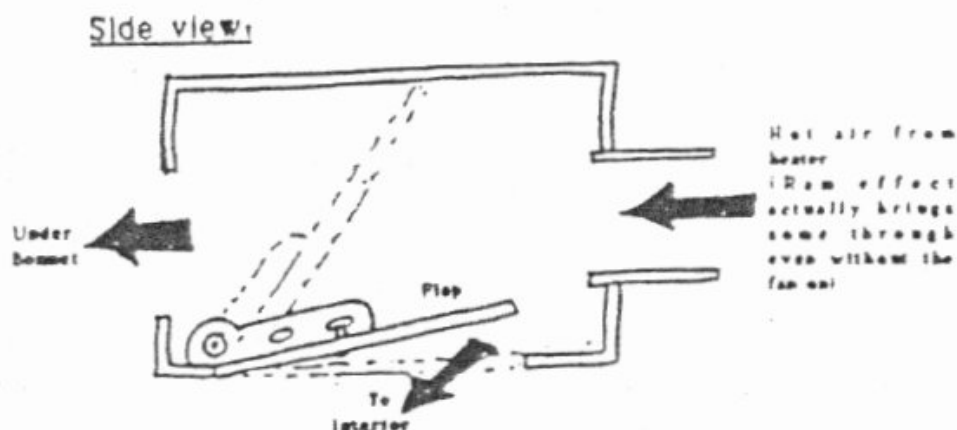
I mounted the heater between the brake master cylinder and the o/s exhaust pipe - it only just goes in under the bonnet! I have disc brakes and used one of the calliper mounting bolts as the fixing point for the bracket - a strip of metal cut and bent to fit the oil cooler bolt hole on the heater, using trial and error to get the heater position correct. This also allows the heater to rock with the engine, thus not straining the pipe work.

The heater is fed from the n/s oil feed on the engine, removing the rubber hose from the front oil cooler and connecting it to the heater via a length of 10mm copper piping. This is joined to the heater with a short length of rubber hose. The return from the heater also runs through 10mm copper piping and is connected to the now vacant inlet on the front oil cooler. The other rubber hose between the engine and the front oil cooler remains as before:



The fan is now wired up through a switch. I put mine on the ignition circuit so that I couldn't leave it on by mistake. In fact, I have wired mine through a Citroen GS panel light rheostat (which I happened to have) which seems to cope with the load. This gives me variable speed which is very posh but almost totally useless as I need it full on anyway! It does give a very neat little switch though.

The final part of the fitting is to direct the hot air to the interior (is there such a thing in a Lomax?). I made a simple box with a hole in the back and a hole in the bottom. With a flap inside this box controlled by cable from inside the car, it is possible to direct the air either down through the hole (and into the car) or straight out the back (under the bonnet to act purely as a cooler in traffic):



All that remains is to cut a hole in the centre of the flat part of the bulkhead (i.e. the part the battery sits on!), fit the box over the hole, connect it to the heater with the plastic trunking and fit the cable control. I tried drawing the box in greater detail to show how the flap is controlled, but my efforts were not at all clear so I'm afraid that part is up to you - I found my old Meccano set came in very handy for axles, levers etc!

And now...

Start the engine, check for oil leaks, turn the fan on, wait for ages and marvel at a warm left foot!

Findings:

The heater keeps the engine cool enough in winter to allow the front oil cooler to be completely covered over, even after 20 miles on a motorway at 70+ mph. This stops overcooling the oil and also produces a quicker (about 4 miles!) warm up period - this can be made even better if I don't turn on the fan to begin with, but as I

fear that I will forget to turn it on later I usually leave it running all the time and have experienced no problems through doing so. A nice refinement would be to put a thermostat in the system to cut the front oil cooler in if needed. As it is, when it gets warmer I remove the cover from the front cooler!

The amount of heat given is quite surprising - not a furnace but definitely warm and at times almost hot. It makes open driving on a cold night quite enjoyable (either that or the cold has killed off my last brain cell). Some sort of system to direct the air as it enters the car would save getting a very hot left foot and a not so hot right one! Maybe even a demister?!!! (Remember - I've got a full screen on).

I hope all this makes sense. If it doesn't and you are still interested in making such a heater then please call me on 0763 852577.

PETER CRAWFORD

From Revd. Peter Low:

Auxiliary Oil Cooler Controlled By Thermostat

This is a modification that originally came to mind after my 223, fitted with twin Bing carbs., showed a tendency to run badly when overheated in heavy traffic. At the time, I was planning to take the car to Portugal where one could only expect the problems to be greater.

I fitted the extra cooler under the gearbox and a little to one side. It was attached to the cross-member of the Lomax chassis. This required a fair length of hose (Aeroquip high pressure), but placed the cooler well into the air flow and meant that the thermostat could be fitted wherever there was space. The thermostat was made by Mocal with $\frac{1}{2}$ " push-on connections, and cost £12.50 from 'Hobbsport' at South Brent in Devon. It came complete with instructions for fitting. b The systems works as standard, passing oil only through the forward-mounted cooler until its temperature reaches 80°. The thermostat then allows the oil to flow through both coolers, one after the other.

To see what the effects were, it was essential to fit an oil temperature gauge. This was more expensive than I had anticipated, but was easy to fit with the sender mounted in a replacement drain plug obtained from 'Europa'. First fitted in chilly February, even in South Devon it took fifteen miles on the A38 for the gauge to show 30°. Sustained dual carriageway or motorway use at 70 or 80mph showed that the second cooler was being used. More gentle use on 'A' roads seldom brought the needle near 80° at all. The trip to Portugal occurred in June '95. Very different from England in February, but the system worked well. To be more accurate, it worked erratically! Some days we could pound along at 70mph in sweltering conditions, the needle would sit rock steady at 80°, and even big hills made little difference. At other times even level running, and big hills in particular, registered 90, 100 and even 110°! Conclusion, the thermostat was not always bringing the second cooler into action.

As to whether the set-up helps in heavy traffic is, of course, debatable. Bad running in such circumstances is far more related to cylinder head and carb. temperatures than that of the oil in the sump. However, as the oil is said to be so important to the overall cooling of the engine, the set-up must help to some degree. As to the erratic reading, I shall have to try another thermostat and see what happens. But what is beyond doubt is that the wide range of temperatures recorded is evidence of what you can inflict on the oil, and consequently the engine, by using a Lomax hard, without a fan and with only one cooler.