

Overheating- An alternative solution.

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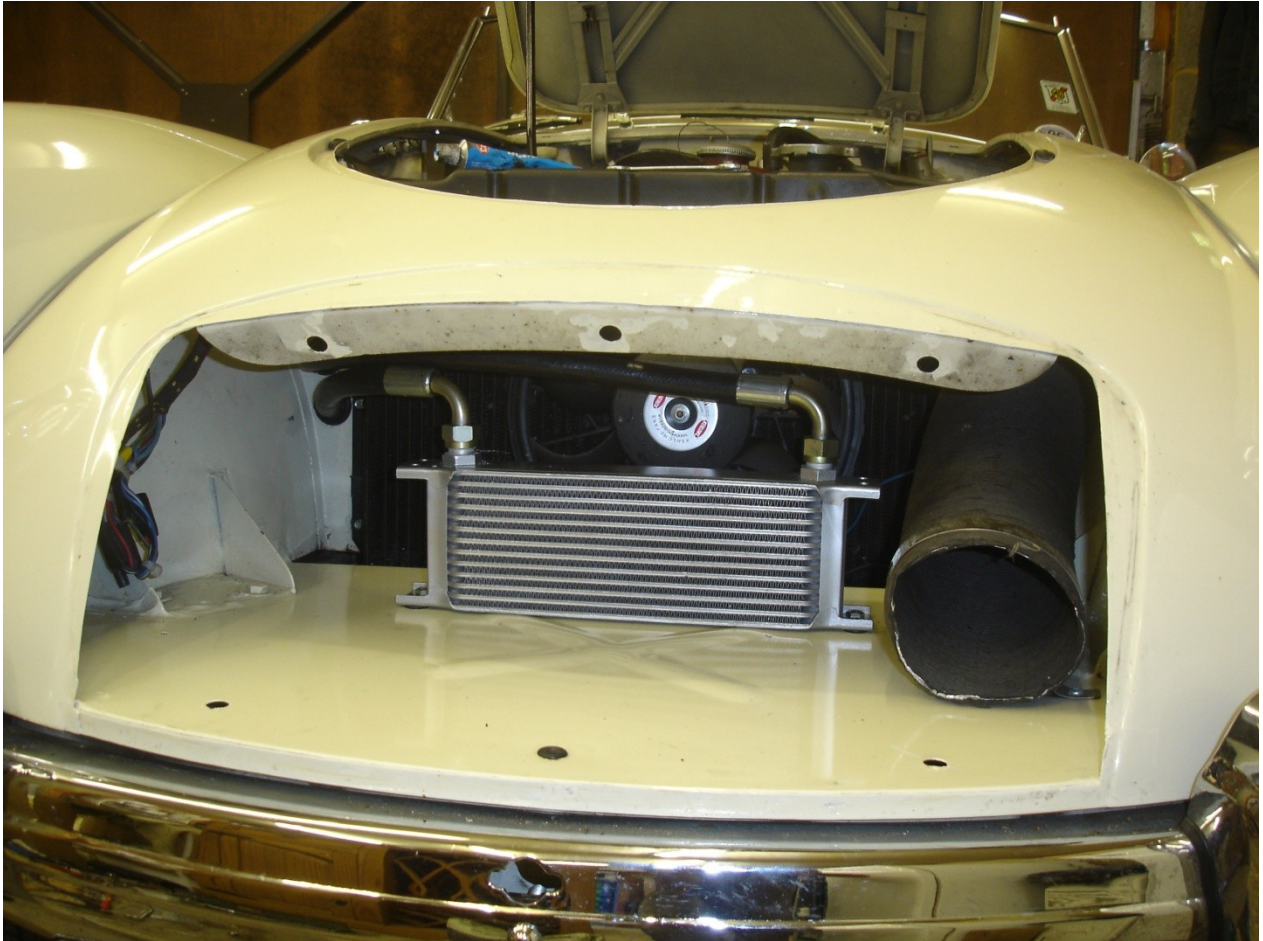
As MGA technical representative, I receive a large number of enquiries about overheating problems. Why this should be the case is open to debate, but the use of modern fuels in a rather old fashioned engine design seems to play at least some part. Recently I started to experience problems myself which manifested themselves when idling in traffic on hot days and also on long uphill gradients at high speed. Having tried all the usual solutions which I had been happily dispensing to all who ask, namely recore the radiator, fan blades right way round, correct pressure cap, badges removed from grill, new water pump, correct ignition timing (8 degrees advance), compression test; I was still having problems.

An electric radiator fan solved the idling problem but did nothing to help the high speed running situation. Then I read an article in the July 2012 "Safety Fast" on the cooling of XPAG engines. The interesting part was that of the 77% excess heat produced by an engine, 50% goes out the exhaust, 5% is dissipated by radiation and the remaining 22% goes evenly into the water and the oil. Many years ago I ran a MGA with an MGB engine and I remembered that it overheated until I fitted an oil cooler.

So- would an oil cooler solve the problem? Oil coolers were originally only a standard fitting on late export (mainly USA cars) but were available as options for retro fitting.(see page 4 below) The bad news is that repro kits supplied by the MG specialists cost around £280 and I was reluctant to spend that much for an unknown outcome. I decided to try to fit a 13 row MGB cooler which with the rubber pipes only costs around £80.

I fitted the cooler in the same location as recommended for the original cooler, namely centred on the radiator duct panel about 100 mm forward of its rear edge. Originally, two copper pipes fed the oil from under the duct panel, changing to rubber hoses once past the base of the radiator. (See page 4 below) I fitted the cooler the other way up with the flexible pipes feeding in to the top of the cooler as on an MGB set up. This involves drilling two 36mm holes in the radiator support bracket on the off side of the car to allow passage of the pipe end fittings. Two grommets of 28mm internal diameter protect the pipes. The cooler takes about a quarter litre of additional oil.

Now- Does it Work? My normal running temperature has dropped from 180/185 to 160/165 and even on long gradients at 70 mph the temperature has never gone over 190. One of the few opportunities to test the car on a hot day was the run to MGA Day at Bletchley Park in August, I am hopeful that I have finally solved the problem.



Installation is pretty simple but an itemised list follows to clarify the method.

- 1, Remove the grill.
- 2 Locate the cooler and drill four fixing holes in the duct panel.
- 3, Cut two 36mm holes in the radiator support bracket on the off side of the car to allow passage of the pipe end fittings.
- 4, Remove the bridge pipe between the oil filter housing and the engine block. This will involve the use of large spanners and you will need to remove the distributor and oil pressure flexy pipe to gain some clearance.



- 5, Install the cooler pipes through the radiator bracket holes complete with rubber grommets (28mm internal diameter) to prevent wear. Note that the right angle ends are for the cooler connection.

6 Screw the longer of the pipes to the block connection at the rear of the engine but do not tighten.

7, Obtain an oil connector adaptor, exactly the same as fitted to the rear of the block and screw it and a copper washer, into the oil filter housing. These adaptors are available from MG specialists but, as they were originally fitted to the blocks of every B series engine ever made, there are lots of used ones about.

8, Loosen off the oil filter canister central bolt (under the car) to allow the housing to rotate and provide a better connection angle for the short pipe. For engines with a “spin off” oil filter, it may be necessary to remove the filter, and then slacken the locking nut holding the adaptor plate.

9 Loosely connect the short pipe to the filter housing.

10, Install the cooler onto the duct panel with packers under it to provide clearance over the pressed "X" stiffener in the panel.

11 connect both pipes to the cooler with short one to the off side and long to the other and leave loose.

12, inside the engine bay adjust the position of the pipes plus various cables etc, to give a neat appearance and smooth runs.

13, Tighten up all connections, not forgetting the filter centre bolt. (Or “spin off” plate).

14 Refit the oil pressure pipe and note that the pipe route may mean that it is not quite long enough. If so the equivalent MGB pipe is around 40mm longer and is otherwise exactly the same design.

15 Replace the distributor and start the car.

16 Once you are sure you have no oil leaks, refit the grill.

17 Top up the oil.

Diagram illustrating the assembly of the Plate AR (Air Reservoir) for the MGA 1600. The main assembly (1) is shown with various components labeled 1 through 15. A separate hose assembly (13) is shown with its own components (14, 15). A small inset shows components 8, 9, 10, 11, and 12.

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