



High efficiency MG V8 radiator supplied by Clive Wheatley

### Radiator options for an MGB V8 Conversion

Chris Bound has been looking at his standard 1977 BGT radiator and wondering whether he can keep it once he has done his V8 conversion. He feels it seems to be much bigger than the ones fitted to the earlier models and not very different from the aftermarket items available for MG V8s. Apart from the hose outlets being at opposite ends and aligned differently, it's hard to see much difference. He says "I fully understand the need to upgrade the early models, but would my late-model MGB radiator (with the addition of a pair of decent electric fans) have any chance of coping with the heat output from a 3.9 EFi V8? I'm not planning any track use, just normal on the road motoring.

**Mike Howlett**, with an MGBGT V8 Conversion with an EFi engine, responded saying "the simple answer is I don't know but what I do know is that the amount of heat from a 3.9 injected V8 is enormous. I started off with an aluminium radiator from Cambridge Motorsports, but I had so much trouble with radiator leaks that I gave up on them in the end. I now have one of Clive Wheatley's upgraded V8 radiators and on hot days it barely copes. The fans run almost continuously below 40 mph and once when in France with shade temperatures about 36 C, the water temperature gauge went right round the scale and into the oil pressure zone. I think the primary problem is that there is no easy escape for the hot air from the engine bay. The V8 radiator is taller than the standard one and comes right down behind the vents in the valance. Is yours like that?"

**Peter Beadle** responded saying "I would 'Bite the Bullet' and follow the Gordon Hesketh-Jones route of fitting a 4 core Radiator he described in his [V8NOTE399](#). I believe **GM Radiators** could easily rework your top and bottom tanks to the V8 specification. If your cooling fan Otter switch is going to be mounted on the inlet manifold as on Factory MGBGT V8s you will need to block off the redundant MGB top tank hole. If you are planning to mount the switch in the top tank, I suggest you use a threaded switch and have a matching threaded collar/nut brazed into the side of the top tank.

**Be careful of the aluminium radiators coming in from China** as most do not have the three correct imperial (unf) captive nuts attached to both side mounting brackets. You will either find metric

nuts or be just left as bare holes! Sometimes, the holes are even machined in the wrong place. Yet more problems to challenge your engineering skills".

**Nic Houslip** mentioned "radiator would be **better called a heat exchanger**, since it exchanges heat from the coolant to the passing air, more by conduction than by radiation. The determining factors are the conductivity of the metal from which the tubes are made and the surface area of the tube in contact with the coolant on the inside and the surface area presented to the passing air. Aluminium is a good conductor of heat but copper is twice as good as aluminium. The manufacture of the tubes and getting the fins (that increase the surface area presented to the air) fitted to the tubes has improved greatly over the last 40 years or so, fortunately a radiator specialist can replace the core of the radiator (the core is the assembly of tubes) with more modern ones. They do this by taking the whole radiator apart and then re-soldering the whole assembly. It comes out as good as a new one. Two Revotec fans would be great upgrade too. The old radiator might have a resale value to someone who was prepared to have it cleaned and re-cored".

**Nic Houslip** added "V8 cooling is a complex issue, but it is vital that everything on the engine is correct, ignition timing and mixture, as these can make a big difference to the heat produced. As a rough guide the heat produced is about twice the power output of the engine (in kWatts). A 190 BHP engine (~250 kW) therefore will produce about 500 KW when on full power. Of course it only produces a much smaller amount at low (typical driving) power levels. Check thermostat is opening fully - it only controls the warm up time, not the engine operating temperature. If you drop it in a pan of boiling water, it should open rapidly. If in doubt replace it. A standard radiator should be OK but if you have a doubt run down to local radiator man and have it re-cored with more modern and more efficient cores – the cost will be about £100 or so.

**Peter Beadle** provided some information from his visit to the NEC Classic Car Show on Friday 9th Nov 2018 when he came across **Coolex Heat Transfer Ltd** in Hall 4 Stand 433. See their [website](#). They are Nottingham based at NG5 6HP. The salesman said they can easily take your old 1976-on MGB radiator case, including top & bottom tanks, rework them to V8 spec and add a new updated core for £220 plus VAT. Or they can supply a new English made imperial threaded Alloy V8 radiator outright for £300 plus VAT. They had an impressive display of product at the show which included samples of both types of radiator".

**David Terry** added "I can vouch for Coolex as they did some work on my RV8 radiator last year and I was very impressed by their quality of work and their price".

**Victor Smith** has been in touch with Clive Wheatley mgv8parts who offer a [high efficiency radiator](#) for MGBGT V8s and MGB V8 Conversions produced by a skilled specialist in the West Midlands on an exchange basis (£279.50) or outright (£391.00) including VAT. The upgraded radiators have the cores in diagonal vertical rows rather than with each core behind each other, which increases the surface area of the cores in contact with the airstream thereby contributing to at least a 25% improvement in cooling. They also supply similarly upgraded radiators for the RV8.

### Overheating and cooling concerns with MGBGT V8s and RV8s

They are a regular topic for MG V8 enthusiasts so there is plenty of information available. [Note & Further information & Radiator upgrade project](#) and also slides from a presentation at the V8 Technical Day in 2013. [Slides](#)

### Sourcing and fitting an upgraded aluminium radiator

An article contributed by Graham Cornford. [Article](#)