

100-4 owners can stop reading here and now as there is no bypass hole in their engine blocks.

I have recently had to remove the grille surround from my 3000 Mk II. This is a tedious job and only possible with the radiator, air deflectors and splash panels out; it's sensible to remove the fan at the same time...access is everything. With the grille out and posted off to be restored I had time and space to fettle everything in that area. The trafficator was centralized. The wiring loom and offshoots (headlights, side/indicator lights and horns) was correctly routed and clipped down. The whole area was cleaned up with Gunk. The grease nipples were removed, cleaned and cleared and all points greased up. The shock tower nuts were checked; these loosen themselves off and everyone should check them, at least annually. Oil levels in the steering box and idler were checked. Did you know that some people put STP Oil Treatment in their steering boxes?? This stiffens up the oil and stops that irritating seepage past the sealing olive where the wiring emerges for the horns and indicators. And, of course, I took the thermostat out and tested it.



Figure 1

This is what I found, per figure 1. It is an AC Delco version of the Smiths Thermostat that would have been fitted by the factory back in the 60's. It is a model TF1, opening temperature 72° C. It is quite dead, immersion in boiling water yielding only the slightest movement. Note that it has died in the "open" position so that coolant will circulate through the radiator as soon as the engine is fired up. In fact, the thermostat might just as well not have been in the car. I have heard it said that our thermostats usually die in the "shut" position and I've seen that in other vehicles;

all I can do is report what I found.

These units have been unavailable for 20 or more years, so long in fact, that most people selling thermostats these days are ignorant of one of their most important features. Important

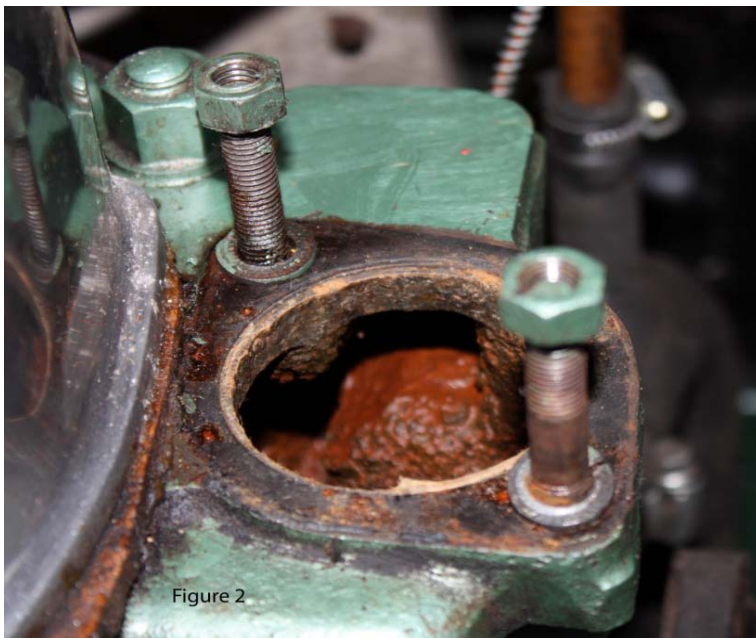


Figure 2

at least to 3000 owners whose cars can be prone to overheating issues..... The thermostat has a "sleeve", the round skirt like thing above the bellows just visible in figure 1.

The sleeve's function is to progressively block off the bypass hole in the block as the engine heats up. When the bypass hole is open, the coolant can only go through the open thermostat and into the radiator via the top hose. This bypass hole can be found as soon as the so-called "outlet elbow" is

removed from the block. (Take off hose, remove two nuts and washers and prise judiciously upwards and off). The hole is visible in figure 2, though just barely. Look at the black area under the furthest section of the thermostat's seating position. That black area is the shadow where the bypass hole vanishes off into the block. Thus, it is plain that the bypass hole is quite large and that it is close enough to the thermostat's top plate for the sleeve to be able to rise up and block it off.



Figure 3 shows a modern thermostat. It has no sleeve. When the top is closed, coolant will flow through the bypass hole only. When the engine heats up sufficiently, the top will open and water will pass into the radiator. BUT, the bypass hole will still be accessible and a sizeable proportion of the coolant will flow through it and back to the hottest part of the engine. Thus that coolant will not go through the radiator and is, in effect, wasted. That is the key issue here, most important in cars prone to overheating.

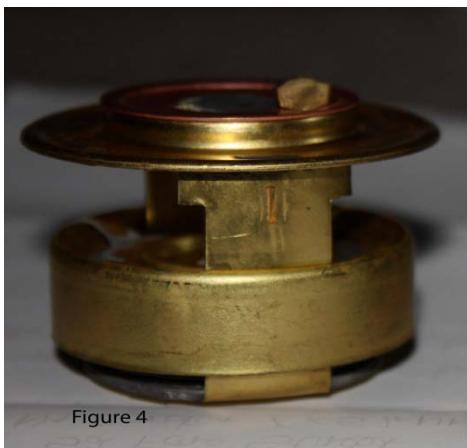


Figure 4 shows an unused and fully functional TF1 old style thermostat. It is cold so the top is closed and the sleeve is down which would make the coolant go through the bypass hole. The little flat six sided object at the thermostat's top right is a "jiggle pin". When the system is being refilled, this pin permits the upward passage of air, effectively bleeding the system...water goes in as one fills up the radiator and the displaced air comes right out. A modern thermostat, figure 3, has no jiggle pin and one needs to top up with water whilst running the engine up to operating temperature.

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Figure 5 shows a TF1 in very hot water. The top is open, to the left, and the sleeve is up exposing the gas filled bellows; coolant cannot access the bypass hole and all of it passes into the radiator. The jiggle pin is shown to advantage at the top of the thermostat.



This is all very well, but what is the point of the article if the OEM units are all gone? Well, they are not quite unobtainable....I've found a few so you could do the same....the internet, as ever.

There is also a modern equivalent, available, I believe from Moss Europe. It looks like figure 3 but with a sleeve and I'd suspect that someone, somewhere, is having sleeves tacked onto limited numbers of ordinary modern units. Their prices suggest that the sleeves are pure gold and that the work is done in the Rolex factory. One could probably do or have the job done oneself....take the sleeve of a dead old unit and tack it onto a new one?? Or, one could go down the Jaguar route. People suggested that Jags had bypass holes and their thermostats are still available. I did not go down that track as I was successful elsewhere.

Norman Nock covered this subject admirably and his article is to be found on page 189 of his Tech Talk book. This is an excellent reference book which I highly recommend. In fact, he is one of the few people who even acknowledge that this issue exists, but then he has been dealing with Healeys forever. When I rang around all our usual suppliers, none of their “answer the phone, serve at the counter” types even knew about bypass holes. What sad lives they must lead!

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