

FIGARO PROJECT PART 7 REPLACING THE HEATER MATRIX



The Figaro's interior has to come out once again, this time to replace the heater matrix after one of its plastic outlet pipes snapped off when the hoses were being changed. REPORT: SIMON GOLDSWORTHY

We left the Figaro last issue in disgrace, after one of the plastic take-off stubs on the heater had snapped off while I was changing the coolant hoses. I was changing the hoses because one had been nibbled by mice and I didn't want to take the chance of a hidden pipe being similarly afflicted and bursting at an inopportune moment. This was particularly galling because to change the heater matrix meant removing the entire dash, a job that I had only recently done in order to fit a leather-topped replacement.

I'm sure I am not the only one who hates having to repeat a major task so quickly. However, there was nothing for it but to take a deep breath, shut the garage door and put the kettle on, then return when I was in a better frame of mind. And on the bright side, this did mean the procedure for removing the dash was fresh in my mind, so I was able to complete the work in one long day rather than two.

The next day found me back out to the garage to finish the prep work before ordering the parts I needed. This involved tracing the remaining coolant hoses, a task made more difficult by the fact that there were plenty of breather pipes which were the same size and shape as one short 90° bend (thanks to the guys at The Figaro Shop for helping me identify the correct one over the phone!). The silicone hose kit had been



1 The Figaro squeezes a lot of equipment into a small engine bay, and it was hard to decide exactly where this hose in the new coolant pipe kit should go. Fortunately, a quick phone call to The Figaro Shop provided the answer.



3 Nissan used twin-wire clamps on all hoses, but these do tend to cut into the rubber when tightened. Simon was happy to reuse them on low-pressure air feed hoses, but used genuine Jubilee clips on the new coolant pipes instead.



2 Although the best advice is generally to always replace everything in the same order as it was removed, Simon decided that it had been a mistake to remove the fan before the radiator and so they were refitted as a unit.



4 Simon managed to lose one of the washers used to seal the oil coolant pipes to the transmission. Fortunately he had some new MG ZT sump washers that were a suitable replacement. Later, of course, he found the original washer!



5 And here are the powder-coated pipes fitted to the transmission, taking the oil to rubber pipes that connect with the oil cooler in the bottom of the new radiator. Note the new pipe clips on the rubber hoses instead of the old wire ones.



7 With so many electrical connections to break, Simon adopted a fool-proof method, labelling each side of every connection with masking tape and a unique letter. A goes with A, B goes with B and so on – simples!



8 There is plenty of help and advice available, but no Haynes manual for instant referencing and so you do have to go carefully and be prepared to adopt plan B. Simon tried disconnecting the fresh air vent at the heater end first...



6 Finally there was no other reason to delay, and the interior had to be stripped. There is no need to repeat the whole dismantling process (such as removing the rev counter to access the speedo cable), much of which was detailed in previous issues.



9 ...but couldn't get the cable angled far enough up to clear the stepped end. The wire is a solid rather than a stranded affair and he didn't want to introduce a permanent kink which would prevent it from operating smoothly...



10 ...so in the end he opted to undo the cable at the other end and then pull it through from behind the heater. Taking plenty of pictures and making notes means he had a fighting chance of reassembling everything correctly.



11 With the dash removed, it was then a matter of searching around the heater unit to locate and identify all the fixings. There was this plastic hook at the top that grips a bracket on the bulkhead and is secured with a single bolt.



12 There was also a nut on either side securing the heater to a stud on the bulkhead. Unfortunately, on the passenger side the plastic lug on the heater unit went behind a corresponding lug on the aircon unit in the passenger footwell.

expensive, but I must say the hoses all fitted beautifully – they were a snug fit on their respective pipes, but only needed hand pressure to slide them into position and no lubrication. As for the genuine Jubilee clips, these tightened easily, squarely and firmly and were a pleasure to use. Sometimes, you really do get what you pay for.

It is generally good practice to reassemble things in the reverse order to the way you took them apart, otherwise it is all too easy to find out that part C obscures access to part A, and everything has to come back off so you can do it again. However, after a good look around I was pretty confident

that taking the radiator fan off before removing the radiator itself had made the job unnecessarily complicated because of poor access, so I put it back on the radiator before refitting the whole lot as a single assembly. Fortunately, this worked fine.

I would also advise you to never throw anything away until the job is finished and has proven itself to be successful. For example, Nissan fitted wire hose clips and I found I was missing a bolt from one of those securing an air hose. I was happy to reuse the wire clip here because it does not have to be so tight that it cuts into the trunking, and I found a bolt in the bag of

old coolant hoses and clips that I had put to one side and was going to throw out eventually. Sometimes you might only need a part that is to be discarded for reference, but at other times there may be a small part on it that you need to move across, and just occasionally the whole thing will come in useful and get you out of a hole.

There was one other missing item that was down to my carelessness. You may recall that I had removed two steel pipes that took gearbox oil to the oil cooler in the bottom of the radiator, and sent the pipes away for blasting and powder coating. These pipes were secured to the



13 The slotted plastic lugs on the heater should have been able to slide sideways to clear those studs, but this support bracket on the transmission tunnel meant that there was not enough movement to get the heater out from behind the aircon unit.



14 So the bracket had to come off too. It was then possible to manoeuvre the heater unit out, though with more flexing of the plastic than was comfortable. At least it meant the rigid lines to the air-con unit did not have to be disturbed.



15 Finally the whole heater unit could be lifted carefully out of the car, taking care not to let any residual water still trapped inside pour out and onto the carpet. Oh for the easy access of an engine-bay heater on a Midget or MGB!



16 And this is the reason for it all. Note the two plastic pipes to the left that poke through the bulkhead and take hot coolant to the heater and then return it to the engine bay. Or rather, note the one stub and the broken remains of the other!



17 With the heater unit on the bench, work could start on separating the two halves of the plastic casing. Each bolt was checked as it came out – if any had been a different length to the others, its position would have been noted.



18 There was one fixing bolt hidden deep in a recess by the fan, but after that had been found it just needed the rod for the defunct valve to be removed and the unit could be opened to reveal the heater matrix that needed replacing.



19 The new matrix has steel rather than plastic pipes, but is missing the valve. This is not a major concern because on the Figaro the face vents only blow cold air, so you can select the foot and screen vents when heat is required.



20 The old foam for the sealing flaps inside the heater was badly deteriorated and crumbling. This could have made it difficult to achieve a seal and direct the flow of warm or cool air efficiently to where it is needed.



21 So Simon used new self-adhesive foam strips to wrap the new heater matrix, and also to replace the crumbling foam on the various directional flaps as well as the fan. This was slightly thicker than ideal, but did the job OK.



22 When reassembling everything, this unmarked connection was a concern, but we sent a picture of it to Simon Smith of the Figaro Owner's Club, who explained that it was not connected on Figaros, but was for an over-speed warning buzzer.



23 We also found a couple of wires whose insulation had been damaged, presumably by careless fitment of some plastic trim in the past. Simon wrapped them in insulating tape before putting everything back together.

transmission with banjo bolts, which had thin aluminium washers on either side of the unions. When I came to refit them, one washer was missing. Fortunately I had some MG ZT aluminium sump washers on the shelf that are exactly the same ID and OD, but 1.85mm thick instead of 0.95mm. I used two of these on the gearbox side of the banjo unions so that the feed holes would be in the correct place, reusing two of the thinner originals on the other sides. **CM**

Costs this issue

Heater Matrix: £262 (outright purchase)