tech talk

NA Model Heater Leak

■ Words and photos: **Peter Ferguson**

For some time, one of my NAs kept giving off an unmistakeable, sickly sweet whiff of coolant. Even after putting in a brand-new engine with, of course, all new hoses, the smell was still there.

Out on a test run, and during a big high-revving hillclimb section, it suddenly got REALLY smelly.

I pulled over, lifted the bonnet and expected to see water everywhere ... *but everything was dry and happy.*

On walking around the car, it seemed to be coming from the passenger area, so I pulled up the carpet under the dashboard and *THERE IT WAS!* **Green crap everywhere.**

The hoses through the firewall were dry, so it had to be the heater core.

While I have read (and now know) that you ***can*** get the heater core out without major disassembly, I knew my body and eyes were not up to it, so it was time to whip the dashboard out.

This seems a huge job but, in fact, if the car has no wiring mods or other aftermarket accessories within the dash, it would not be too bad. With the experience I now have I reckon I could have the dash out in 60 to 90 minutes. However, mine ***did*** have lots of aftermarket wiring which was tangled around everything (I knew this from a previous partial dash removal to fix the heater fan) so the removal took a bit longer.

Once all the unnecessary wiring was removed (see photo #5), I could pull the dash right back and get to the problem. Removal of the heater unit is easy once ☛

Dash binnacle removed – take GREAT care as the plastic on NAs is *highly brittle*. If you break the tangs on the back, they CAN be epoxied back on. The blinker/wiper switches need to come off – power plugs in the rear

1

I THOUGHT it would be easier to leave heater controls in place and remove after ... *Nope*, remove first – unlatching from three points (two on heater box and one on blower box) is a simple one-hand operation

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■ Please note: All "Tech Talk" information is provided as a guide only. All work is carried out at the owner's risk.

Above: Heater core and outlet copper hoses after pressure testing. Note that the rubber connector tubes may be over 30 years old and were still in good condition

This is what the back of the firewall looks like once the dash is removed: the box on extreme left is blower and selector for fresh or recirc air; the box in centre is the A/C unit, the white box on right is the heater unit. See plastic cover plate on extreme right of this box with wiring harness beside it and clutch pedal obscured. Removing this cover plate gives access to heater core and pipes

the operating cables are removed as part of the dash removal. Three M6 nuts and the unit was on the bench.

On the side of the box (adjacent to the clutch pedal) there is a plastic cover plate, and under it is the end of the heater core and its two outlets which connect to the two long ***copper*** pipes (photo #3) that run across the back of the heater unit, bend 90 degrees and go through the firewall to connect to the heater hoses in the engine bay.

My strong advice is – given these are copper, and in particular if you have an NA8 engine with the cam angle sensor (CAS) adjacent to these pipes – if you are removing or re-fitting the engine to the car, ***do not*** have the CAS in place. Ask me how I know this can cause issues ... the pipes can, and probably will, get hit and bent out of shape easily! I was able to turn up a tapered bar on the lathe and gently reform the pipes but best not to have to do this.

Now, back to the heater core.

I left the joiner hoses and copper pipes on, and set up a test where I could pressurise the unit to about 20psi and spray some soapy water on to the core to find the leak. *Hmm ... no sign of a leak,* so I sprayed the two short rubber hoses which join the copper lines on, and there was the leak on one of these.

The short hoses appeared to be in perfect condition (but I replaced them anyhow); however, on removing the hose from the heater core, there was a ***lot*** of "gunge" on the outlet pipe of the heater core ... indicating it had been weeping for a long time.

So out with the emery paper to clean up the pipe ends, fit new hoses, re-use the hose clamps, fit it all up and re-test – *perfect, no leaks.*

It was at this point I asked myself could I have "simply" left the dash in place and pulled the cover off the heater beside the clutch pedal and fixed the problem there? The answer is *possibly/probably* – I'll never know. But after talking to someone who ***has*** done this repair that way, I know my neck, arms and eyes would not have coped.

Back to the heater unit: I gave the entire unit a good clean (a big task as it was very oily which, as the car has a non-standard A/C unit fitted, I speculate was from a previously "blown" unit), and then replaced all the foam seals I could.

Then it was "simply" a matter of fitting it all back together and then doing the best I could to dry the carpet out. This seems to have worked well using (with care) a fan heater, and there seems to be no residual smell.

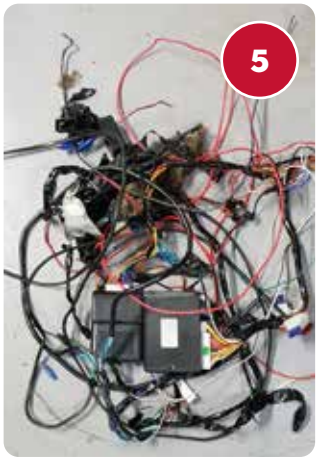
So, the question I finally asked myself is how come the heater, with its outlets beside the clutch pedal, leaked water into the *passenger* footwell?

I think the answer is that the leak, although on the driver's side, allows the coolant to run through the heater unit to the passenger's side and then into the footwell ***and*** the A/C unit (I know this as the drain from the A/C was full of green coolant also – I don't understand this as the water would have to run uphill ... but, it was there).

Looking at the unit back in the car, I remain surprised that there was no noticeable leakage on the driver's side. I suspect I was simply "lucky", so if you find coolant in either footwell, there is a good chance this is your issue.

If you are the owner of small hands and don't mind working on your back under the dash – after removing the driver's seat – it would be worth at least trying to work on the clutch-pedal-side of the heater while still in the car.

That said, removing the dash is far easier than it probably looks, providing you don't have an aftermarket wiring "issue". ■



The pile of useless ancillary wiring, alarm and auto window closers which was all behind the dashboard and woven in and out of EVERYTHING. After removal I crossed my fingers and hoped the car would start and everything would work – amazingly, it did!