

## A Draining Experience

### *D-Series: A Vital Check when Draining Coolant*

Around three years ago I was preparing my D Special for a trip to Portland with CCCV. I noticed the drive belts on the engine had begun to crack, so I made the decision to replace them in preparation. While I was in the area, as it were, I had the radiator checked, replaced both water pump and hydraulic pump belts and even the water pump. The metal pipe in the lower radiator hose was also replaced with a stainless steel unit I had made back in the 1990s.

When re-assembly was complete, I refilled the cooling system, started the engine, ran it to

warm the cooling system up and carried on doing some other jobs. Next I heard cracking and banging from the engine: a check of the instruments showed the temperature light and the stop-light both illuminated.

I turned the engine off to let it cool and started checking causes. I tried everything over the next couple of days but could not find the source of the problem which persisted, no matter what I did. It was as if there was an airlock in the system. I took my modern car on that rally in disgust.

When I returned home from Portland, the D started up, warmed up OK. I topped up the

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cooling system and ran the car without further problems. On one trip my wife, Libby, asked if I would turn the heater on; which I did. But the heater did not work, which I thought was odd at the time. Returning home I forgot about the heating problem until I was preparing the car for OzTraction in Bairnsdale. Thinking I may well need the heater, I removed the heater unit and tap, flushed it through with the hose and concluded it was working perfectly. So, I looked for the problem elsewhere. Passing air through inlet hose from the cylinder head, bubbles appeared in the radiator but the return hose simply pressurised.

This led to draining the cooling system, removing the lower radiator hose to find all those years ago when I made the stainless steel section, I had neglected to drill a hole in the tube where the stainless steel hose connector had been welded on!

My mind went back to the earlier problem. Could this have been the cause of it? After re-assembly, I proceeded to refill the cooling system, warm up the engine, then I had a repeat of my earlier problem: temperature lights on, crackling in the cylinder head, etc.

More checks were carried out, thermostat, re-checked the radiator, then decided to remove the water pump again



and what do you know, that was perfect too! Now this is my car's original engine, so it's cooling system has been flushed and cleaned over its life, rust inhibitor used continually in my ownership of 28 years and it is pretty clean. Not perfect, but as good as one can get an older engine. I did have another thermostat housing handy that I could inspect and found a drilling from the centre of the back of the water pump to the radiator hose outlet on the housing. When I checked this drilling on my car, it was visible at the water pump end but not at the hose outlet. Using a scraper I removed a couple of scale deposits and uncov-



ered the missing hole, cleaned the hole thoroughly with a drill bit, then re-assembled the car once again. I re-filled the cooling system once again.

This time the engine warmed up normally, heater heated quickly, everything returned to normal, leading me to think this scale build up over time did not cause any problem until the cooling system was drained, then hampered the

removal of air in the system after refilling. This is the reason I am writing this article. So if you have a need to drain your cooling system, before re-filling, remove the top radiator hose and check this hole is clear; it may save you a lot of problems.

I must stress that I normally refill the cooling system without the top hose fitted to allow the coolant to fill the engine before refitting the hose and thermostat but this time in desperation I even filled the heater lines separately. I think in the manual it says to always open the heater valve when re-filling with coolant and running up engine to temperature. Check out the photos, this bleed hole is readily visible from the top once the radiator hose is removed, the water pump needs to be removed to see the other end of it.

NB: This only applies to short stroke engines 1965 onwards.

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