Johno's Guide to the V6 Cooling System

DRAINING – FLUSHING – Radiator replacement and REFILL

As part of routine servicing the manufacturer recommends that the engine coolant is replaced periodically. This guide takes you through the process step by step. Radiator replacement has also been included as this is a common failure in the V6 variant of the coupe. For those who just wish to replace the coolant then simply ignore the radiator removal and replacement steps as indicated.

You will need the following tools:-

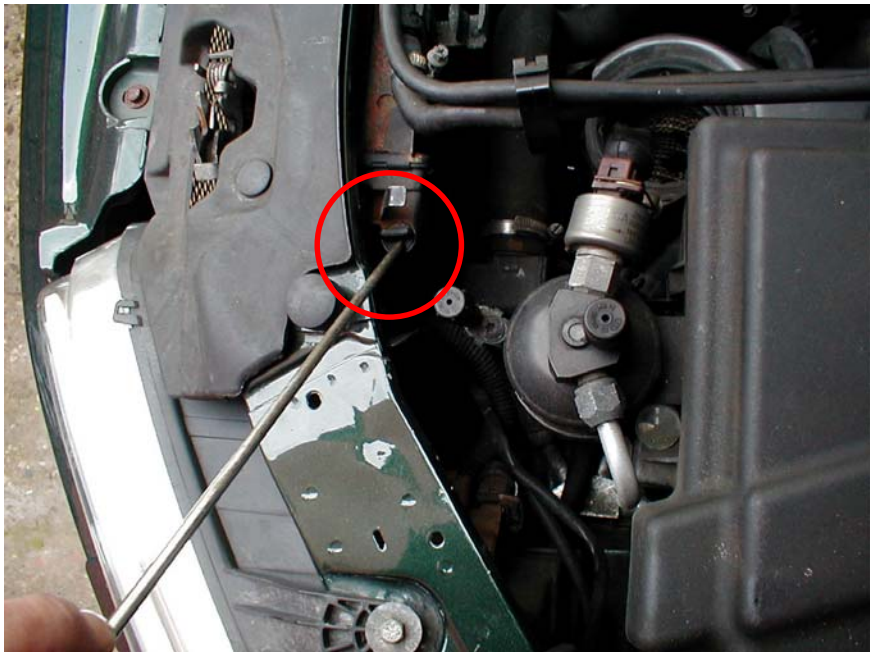
Flat head and Phillips screw drivers
Pliers
Allen keys
13mm long reach ¼ inch drive socket and drive or 13mm spanner
5 litres of anti freeze (must have corrosion inhibitor content)
2 litre plastic fizzy drink bottle
Insulating tape

1) Firstly remove the following, the expansion tank cap, the splash guard under the engine and the air filter box.

2) Open the radiator drain valve on the lower left hand corner of the radiator (viewed facing the rear of the car). Then open the radiator bleed screw on the top right hand corner of the radiator by ¼ turn and lift it up using a pair of pliers. The radiator will now begin to drain.

Fig1: Radiator drain valve location.

Fig 2: Radiator bleed valve location



3) Open the three bleed points on the top of the engine, the first is on the heater hose near the bulkhead, **Fig 3**.The other two are on the thermostat manifold **Fig 4**. as indicated in the following pictures.

Fig 3: Heater hose bleed

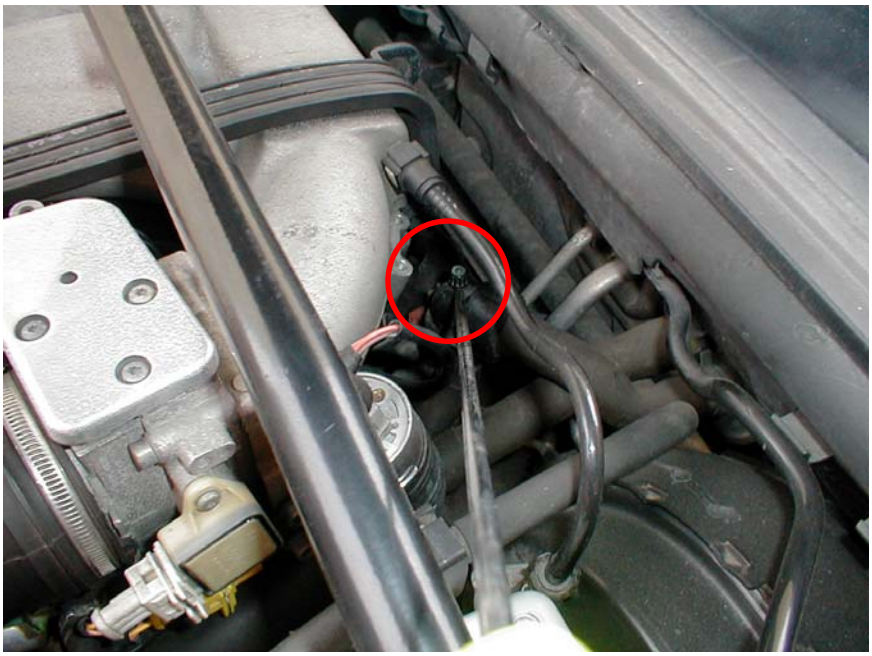
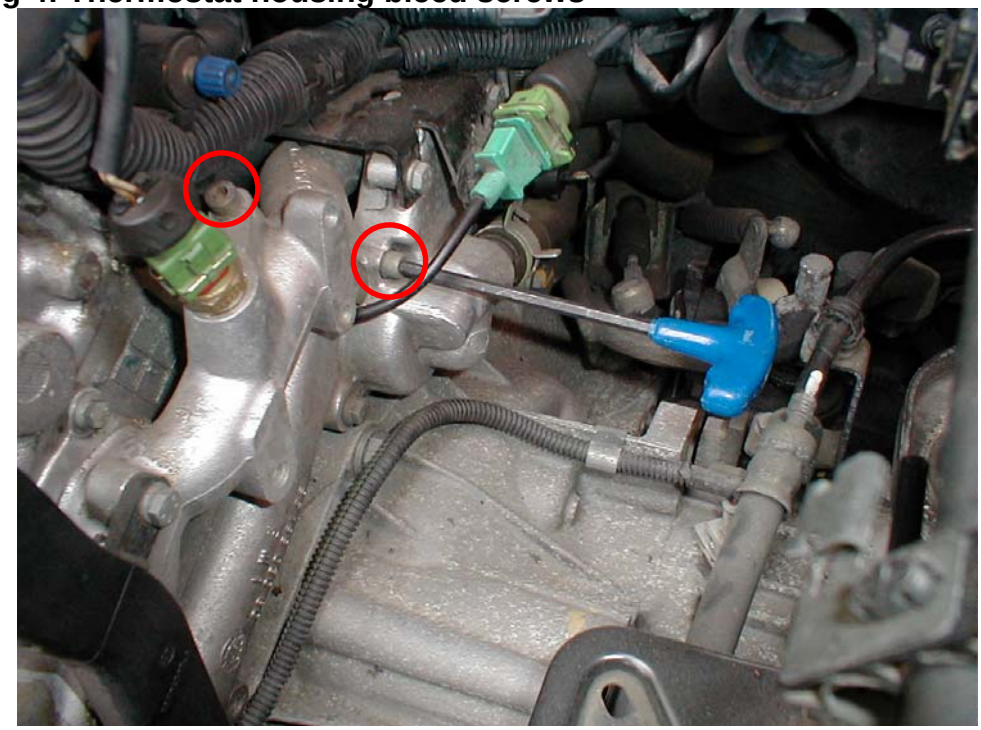


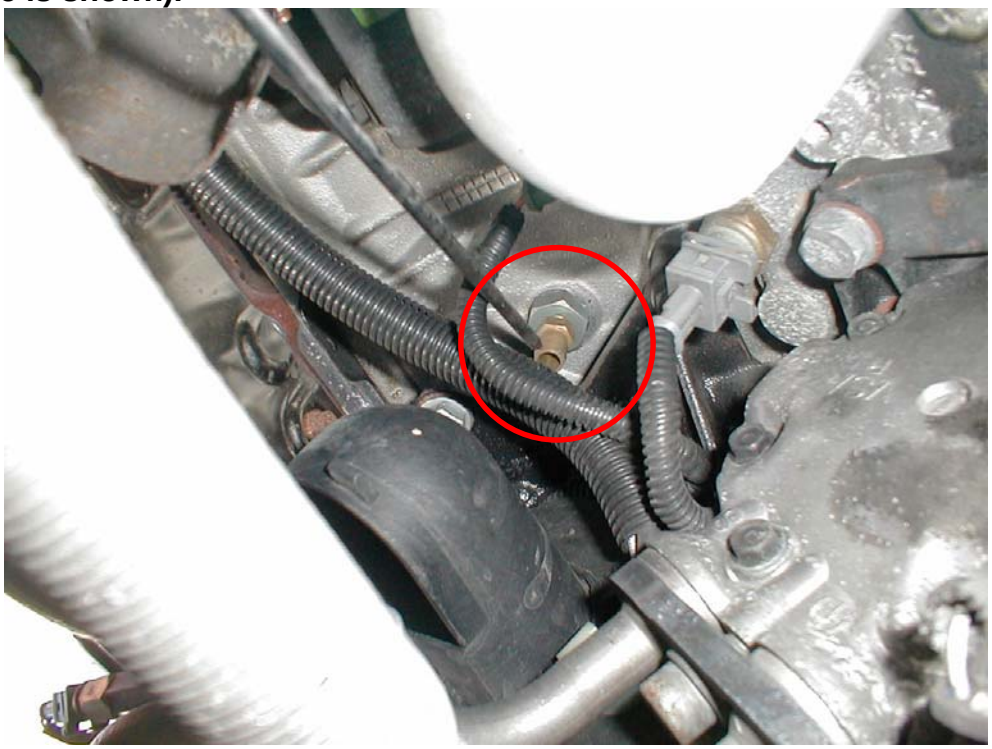
Fig 4: Thermostat housing bleed screws



(as a point of reference the sensor with the green cap on next to the top bleed point is the infamous injection coolant temperature sensor)

4) Now the hard ones, there are drain points on either side of the engine block, one on the front of the V the other on the rear, they very difficult to get to and are opened with a 13mm socket or spanner Fig 5.

Fig 5: Engine block drain (viewed from under the car, only the front one is shown).



5) Allow the coolant to completely drain from the system. When the coolant has finished draining run a hose pipe in to the expansion tank until the bleed points all run clear, turn off the hose and wait for the system to drain completely.

6) Close the drain points on the front and rear of the engine block and the bottom of the radiator Fig1 and 5.

7) If you are not replacing the radiator skip to step 11.

8) Release the two jubilee clips on the radiator hoses nearest the thermostat housing leaving the hoses attached to the radiator.

9) Remove the air intake from the alternator Fig 6.

Fig 6. Alternator air intake, and intake removed.

10) Release the two retaining clips at either end of the radiator and remove the radiator by lifting it upwards, transpose the hoses to the new radiator and in the great tradition of Haynes manuals re-fitting is the reverse of removal.

11) In order to bleed all the air from the heater matrix when re-filling the system you will need to make a header tank adaptor. Take a 2 litre fizzy drink bottle and fill it with 1 litre of water, put the cap on, turn the bottle upside down and mark the 1 litre level on the outside of the bottle. Empty the bottle and cut off the base, then wrap some insulating tape around the thread to form a seal between the bottle and the header tank Fig 7 and 8.

Fig 7 Finished header tank adaptor in place

12) Fill the bottle slowly with 50/50 mix of anti freeze and water, close each of the remaining bleed screws in turn when coolant flows without bubbles. The bottle must be kept topped up to the 1 litre mark throughout the filling and bleeding process in order to bleed the heater matrix correctly.

13) Once all the bleed screws are closed start the engine and maintain 1500 to 2000 rpm, this can be done by moving the retaining clip on the throttle cable. Fig 8.

Fig 8

14) The engine speed must be maintained at this level until the end of the second cooling cycle (fans start and stop twice). The bottle must also be kept topped up to the 1litre mark.

15) Stop the engine after completion of the second cooling cycle and remove the bottle. Refit the expansion tank cap and tighten, once cool the coolant will return to the correct level in the expansion tank.

16) Crack open a beer and sit back and admire your work.