



### RV8 self-purging top hose insert

Those who have done the job will know what a pain it is to refill the RV8 cooling system when changing the coolant, or following work on the system. With the original RV8 cooling system, filling has to be done very slowly and, in the final stages, you are as likely to fill the valley gasket as the cooling system, when trapped air coughs back through the filler pipe. No amount of squeezing of the top radiator hose will fully purge air locks from the system, and entrapped air will accumulate in the arch of the hose when the engine is running - leading to reduced coolant flow and possible engine overheating.

In 2015 I produced a [bleed insert](#) to help remove trapped air when refilling or maintaining the RV8 cooling system. I have now devised an improved solution in the form of a self-purging insert fitted in the top radiator hose. A prototype fitted to my car is performing well - see the photo above.

### New coolant bleed procedure

The procedure to fit the top hose insert and fill the cooling system is as follows:

1. **Partially drain down the system** so that the top hose is emptied. Cut the top hose in the centre of the arched portion. Fit the hose insert, secure with two 45mm hose clips (preferably stainless steel).
2. **Set the car heater control to 'hot'**, in order that the heater matrix will fill with coolant.

3. **Remove the coolant filler plug** located in the coolant rail to the right (offside) of the inlet plenum chamber. You will probably already have replaced the original unreliable plastic filler plug with a metal one. If not, standard flanged brass plugs are readily available from plumbers merchants or on eBay; the size is 1/2 BSP.
4. **Remove the expansion tank cap.**
5. **Remove the screwed fitting** in the top right-hand side of the radiator which takes the small rubber hose connecting the radiator to the expansion tank. Cut the hose to the expansion tank to a suitable length and fit to the side pipe on the top hose insert - as shown in the photo alongside. Secure with a correctly sized hose clip.
6. **You will need to buy** another 1/2 BSP flanged plug and sealing washer - the same as the one for the coolant filler pipe - to replace the fitting for the expansion tank hose in the top of the radiator. However, do not fit it to the radiator yet!
7. **Fill with the correct type and strength of coolant** via the tall coolant filler pipe alongside the engine. (A plastic funnel with a suitably sized spout to screw into the filler pipe helps to avoid spillage, as does wrapping a piece of absorbent rag or kitchen roll round the pipe to catch any spills.) Observe the coolant level in the radiator through the threaded hole for the expansion tank hose and stop filling when the coolant reaches the bottom of the hole threads. Now fit your new 1/2 BSP plug and washer to the hole, and tighten the plug. Continue filling with coolant until the correct level in the expansion tank is reached. It is necessary to fill fairly slowly at this stage to avoid spillage from the filler pipe. There should be minimal coughing back into the funnel when pouring the coolant in, and entrapped air in the system will self-purge via the top hose insert as the system fills up.
8. **Refit the expansion tank cap** when the level in the tank is correct and then continue to fill **slowly** until the filler pipe is full. A rag placed under the filler pipe will catch any small spillage.
9. **Refit the plug to the filler pipe**, with its sealing washer, and tighten. Remove the expansion tank cap again and squeeze the top hose a few times to expel any residual trapped air into the expansion tank.
10. **After a trial run - and after allowing the system to cool, of course**, depressurise the system by removing the expansion tank cap and squeeze the top hose a few times to expel any remaining trapped air. Top up the expansion tank to the correct level, if necessary. Replace the expansion tank cap. Then remove the filler plug and check the coolant level in the filler pipe. Top up the filler pipe if required, and replace the filler plug.
11. **You should also check that the heater** is actually working on your trial run - which of course it should be, since the heater valve will still be open!
12. **Recheck for entrapped air** after a few more runs, as at point 10 above.

The above twelve point procedure still appears fairly involved when written down step by step, but it is quite quick and easy to carry out in practice. It normally takes 3 or 4 minutes to fill the system from empty, rather than the 30 - 40 which has been quoted for the standard arrangement.

Although my car is fitted with a non-standard brass expansion tank, this insert arrangement should work equally well with the standard tank, or the modern replacement one available from Clive Wheatley. I am planning to make a batch of the self-purging inserts, which should be available shortly through Clive at MGV8parts.