

SMOKE GETS IN YOUR EYES

New club member Dave Todd's Mk3 MG Midget recently developed an unusual fault. The car would start and run OK for the first couple of miles, but then, when accelerating, it would emit copious clouds of dark smoke from the exhaust. This smoke cloud was sufficient to cover both lanes of the A19 dual carriageway, and following motorists backed off rather quickly! Strangely, if the car was stopped, and then re-started it would run OK for the rest of the journey.

Googling the problem, it seems other Midget owners have had the same problem but, as usual with Google, there were several opinions as to the cause.

The first thing we did was check the cylinder compressions to see if there was a broken piston ring, or similar. The dry readings (from cylinders 1 to 4) were: 180, 155, 155, 160 psi. We're not sure why cylinder 1 was higher than the rest, but otherwise the readings seemed quite healthy.

To check for bore wear we repeated the readings after putting a squirt of oil in each cylinder to improve the seal. The new readings were 205, 210, 205, 210psi. These are quite high for a 1275cc A series engine, and probably indicate a high compression engine (as a rule of thumb they reckon for this engine the compression reading is approximately 20x the engine compression ratio, making the compression ratio about 10:1 compared to 8.0-8.8 for a standard engine). Although the history of the engine history was not available, we understand that the car had been used for trials, so it is possible that the cylinder head had been skimmed at some stage to increase the compression ratio. Oil pressure when the engine is hot is 60psi+, which is quite healthy.

Having reassured ourselves that, apart from a bit of bore wear, there did not seem anything drastically wrong with the engine we next considered the engine breather system. In the Midget the breather system comes from the front of the engine, through a canister containing wire gauze, and then via a rubber tube to a Y piece next to the carburettors. The two outlets from the Y piece go into each carburettor, so that any oil fumes from the engine gets into the petrol mixture to be burnt in the cylinders. Unfortunately you can't get at the gauze inside the canister to clean it without removing the front cover from the engine, but shining a light down the outlet pipe showed it wasn't blocked.

One of the theories as to the cause of Dave's problem was that when the engine is cold any gas leakage past the piston rings on the compression stroke causes a slug of oil from the sump to be ejected up the breather pipe and into the carburettors. This then produces the smoke cloud. When the engine is warm the oil is thin enough not to form a slug, and drains more readily back into the sump. Although there is always some leakage past the rings even on a new engine (hence the need for a breather system) it is claimed that this 'slugging' happens more readily with part worn high compression engines like Dave's.

One of the ways to avoid this problem is to warm up the engine before going for a run, but this is a bit of a nuisance. An alternative is to install an oil catch tank in the

breather pipework system. It is understood that these are often used on engines for racing cars which run with high compression engines.

We were able to find an oil catch tank on e bay for £19 including fittings, so thought it was worth giving one a try. The tank has an inlet and outlet pipe, an oil level sight tube on the side, and a drain plug on the bottom of the tank.



Catch Tank before installation



Catch Tank installed into engine breather

The tank was plumbed into the breather pipe system, between the canister on the engine and the Y piece to the carburettors. Having installed the catch tank we went for a test drive and there was no evidence of any smoke, so hopefully this has cured the problem – time will tell!

Kevin Prosser & Dave Todd