

Audi 200/100 Turbo.

Petrol smell whilst driving (Sometimes accompanied by a ticking noise.)

Introduction:

This is a very common problem for 5 cylinder turbo charged Audi's. The symptoms are usually the following, immediately after start-up there is a strong smell of petrol in the cabin and a loud ticking noise from under the bonnet. The smell might also be evident when the engine is warm when accelerating hard or climbing steep hills. Another problem this fault can cause is poor acceleration at times and normal/good acceleration at others.

Cause:

Warped or cracked exhaust manifold, broken exhaust manifold studs.

Reasons:

There have been many theses given as to why this happens. Some say that it is simply poor metallurgy on Audi's part, thus at high temperatures the manifold tries to expand and can not do so, so instead warps and breaks the manifold studs or cracks the manifold itself or both. Another theory is that it is caused by worn or unserviceable gearbox/engine mounts. The idea behind this is that the exhaust down pipe becomes closer to the front cross member and during acceleration/ deceleration or over rough ground the down pipes hit the cross member and the resulting shock causes all of the damage.

My theory? Quite honestly I don't know!!! The simple fact is Audi spent a lot of time and money designing and developing this car but even clever people make mistakes. Also I have fixed around two dozen exhaust manifolds and of these only 4 had bad engine or gearbox mounts!

To put it straight if the mounting are worn on the O/S of the engine then replace them whilst the exhaust is out of the way!

Remedy:

Firstly disconnect the earth lead of the battery (As you will be working over the top of both the starter motor and the alternator) make sure you have the codes for stereos etc first, or use a memory saver device.

Remove the inlet manifold, watch how you do this as there are three small Allen bolts that are virtually impossible to see and have a tendency to breakthrough the manifold and ruin it!

Once at the exhaust manifold the fun begins! If you do not have oxy acetylene equipment it can be all but impossible **YOU HAVE BEEN WARNED!** Give every stud, nut and bolt a good dousing with penetrating fluid and leave for at least twenty minutes to soak in deep, applying more if needed.

Remove the waste gate from the end of the exhaust and then try and remove the turbo from the manifold. Without special spanners and a hot-axe this can be impossible.

(My way of doing this if the turbo looks as if it won't come off without trouble is to remove ALL the pipes from the turbo and cover with bags and secured with elastic bands. Then undo the down pipe from the exhaust system and remove the whole manifold, turbo and down pipe from the car and disassemble on the work bench.)

If there are broken studs in the head, the head will have to come off! Unless you have access to certain engineering equipment the head is best left to a specialist company.

If it is a manifold problem it is best to get the mating face resurfaced and then trace the cracks right down to their ends. Then centre punch the end of the crack (at both ends) and drill through with a 1/4" drill bit. Using a dremel or similar item grind down the line of the crack so there is a 45 degree valley down the line of the crack. Using an arc welder with 4mm cast steel rods and high ampage weld right from end to end of the crack.

Reassembly is the reverse of the above but I strongly recommend that you use A2 grade stainless steel studs and brass nuts on the manifold. And that you use new nuts, washers and bolts all round.

Now for the bad news, I have achieved about 95% success rate on the above procedure over a two year period. E.G. most cars are fine once done but sometimes it comes back! The only solution then is to buy a three piece manifold and all mounting bits from Audi for a total cost of around £1200.00!!!

By Spencer Truman.