

Beech Hill Garage K series Head Gasket Fact Sheet

- **Is there a way of preventing my head gasket from blowing?**
 - There is, sadly, no 100% way of preventing this but there are things you can do to minimise the possibility. First and foremost, you just have to keep a close watch on your coolant level and investigate any loss no matter how minor it may seem. Minor coolant losses have a tendency to become major coolant losses over time. On an MGF or TF, this is easy as you can check it in seconds every time you put something in the boot.
 - You should also regularly check the oil level, oil not only lubricates your engine it also helps to keep it cool.
 - Have the car serviced to the manufacturer's service schedule at a garage that knows that type of car. At Beech Hill, we are only too aware of how important cooling system integrity is on a K series engine and always have a look around the cooling system when we service a car.
 - If the gasket should need replacing, get the job done by a garage that has experience of the K series engine.

- **So, why did my head gasket blow in the first place?**
 - There are several common causes for this but they invariably come back to lack of attention to the cooling system.
 - You should understand that the water jacket (that's the bit that holds the coolant as it travels around the engine) on a K series engine has a relatively small capacity when compared to other engines. This means that even a small coolant loss will run the risk of your engine overheating.
 - The answer is:
 - ✓ Check coolant level regularly.
 - ✓ Do something about any regular coolant loss immediately.

 - Common causes of coolant loss include:
 - ✓ Radiator.
 - ✓ Water Pump.
 - ✓ Cooling system pipes and hoses.
 - ✓ Inlet manifold gasket (often appears to be leaking from head gasket).

 - The original K series engines had a single layer gasket and plastic dowels locating the head on the cylinder block. The gasket was not very tolerant of either heat or of "head shuffle" (the head would move slightly as the plastic dowels got hot). The current gaskets are of a multi-layer design and much less susceptible to breaking down when hot, the plastic dowels have been replaced with steel ones which are a very tight fit and prevent "head shuffle".

- **I think my engine overheated and I'm worried that the head gasket may have gone, how do I tell?**

- This depends on what the cause of failure is and how the gasket is leaking. Amongst the most common symptoms are:
 - ✓ The oil on the dipstick has a grey appearance, similar to mushroom soup.
 - ✓ A quantity of what looks like mayonnaise is present under the oil filler cap.
 - ✓ The heater has started to blow only cold air.
 - ✓ Steam from either the engine bay or the exhaust tailpipe(s).
 - ✓ Performance loss.
- However, you may have some, all or none of these symptoms. It's worth saying that relying on the temperature gauge to warn you of an overheat condition is not a good idea. If you suffer substantial coolant loss, the gauge may warn you too late or may even not register anything is amiss. This is because the gauge monitors the temperature of the coolant, if there's no coolant then it thinks everything is OK.

- **Is there a way that I can be sure my Head Gasket has actually failed?**

The K series engine has a bad reputation for HGF and it is very easy to jump to the conclusion that it has failed. Some of our professional acquaintances will attribute everything from a flat tyre to a flat battery to HGF! Below are some clues to help you decide if indeed you do have this problem.

If the head gasket has failed, you will have one, or more, of the following symptoms:

- Coolant in the oil – The gasket has failed between one of the waterways and one of the oil drain ways. A sure sign of this is coolant loss together with murky dark coloured oil, with flecks of cream, very reminiscent of mushroom soup. You will also be losing coolant. Don't confuse this with the white deposit (mayonnaise) that you often see on the dipstick above the oil level which may just be caused by condensation, likewise the similar deposits you may notice on the underside of the filler cap, But you do need to watch closely to see if this develops into something more serious.
- Oil in the coolant – The gasket has failed between the high pressure oil way feeding the camshafts and a water way. The oil is at a higher pressure than the water so escapes into the cooling system and finds its way into the coolant reservoir. Coolant should normally be sparkly clean. Again don't confuse this with dirt in a poorly maintained cooling system (the coolant should be replaced every four years) or residue from a previous HGF. Flush the coolant system and keep an eye on things to see if they re-occur.

- Steam from expansion tank cap whilst there is still coolant in it. This could simply be a cap that needs replacing as it is letting pressure off too soon. It could also be that the gasket has failed between a cylinder and a waterway. If it is the gasket then combustion gasses are escaping into the coolant system and displacing water. The system will pressurise and the relief valve in the cap will blow. This could also be caused by poor coolant circulation, partially blocked radiator, stuck thermostat, an air lock or blown radiator fan fuse. Check that your radiator fan is working and that there is no air in the radiator or heater circuits. Bleed the system, start the engine and rev it. After one minute, stop the engine and open the coolant cap. If there is an unexpected pressure, then that's confirmation.
 - Loss of coolant with no other symptoms – This is the \$64,000 question. It could be that the head gasket has failed between a waterway and atmosphere. This is most common along the front of the engine above the exhaust manifold. It should be possible to see some witness or staining from the leak above the heat shield. The more likely cause of water loss is a bad hose joint, leaking hose, under pan coolant pipes, water pump gland or a corroded radiator. It should be possible to see some water dripping somewhere but be aware that some leaks only show when the engine is warming up or cooling down. Put the car onto a dry surface or some newspaper to see where it might be dropping. Exhaust all other possible causes before concluding it's the head gasket.
 - Following the above tests, you may think that it is possible for combustion gasses to escape to the atmosphere or for oil to escape to the atmosphere, however there is no interface between gasses and atmosphere or oil and atmosphere. If you have an oil leak in this area, it's not the HG, it's more likely to be the cambox.
 - Garages will be able to assist you in your diagnosis. They will be able to pressure test the cooling system which may help in identifying where the coolant leak is, they will also be able to test your expansion tank cap for correct break-off pressure. It's not unknown for even "new" caps to blow at a much lower pressure than they ought to. They also have test kits to analyze the coolant to detect the presence of exhaust gasses. Well worth investing in these two tests if you are not sure.
- **Can I keep driving the car if I top the coolant up regularly?**
 - The short answer is yes, you can. However, if coolant is getting mixed with engine oil and emulsifying it then the oil is not going to be doing its main job of lubricating the engine, that may well be causing even more damage.
 - You may also be causing unseen damage to the cylinder head.
 - You may end up damaging the cylinder liners as well.
 - All in all, it's best to get the car recovered to a garage that can do the job ASAP, rather than carrying on driving it.

- **What are my options for getting this repaired? I've heard that I can get it done on my drive by a mobile mechanic. I've also heard that it shouldn't cost me more than £450 – 500.**

- You have a variety of options but the one single thing that you should always be aware of is that this is a job for someone who knows what they are doing. It's not complicated but it is specialised. Ask the simple question – “How many K series head gaskets have you replaced?” If the answer is 20, 50, 100 or more then see if you can get a testimonial from one of these previous customers. If the answer is - “It's a head gasket, we've done loads of them on loads of different engines” - then it's time to walk away and enquire elsewhere.
- A mobile mechanic doing the job on your drive is quite feasible – until something goes wrong. Does he carry all the parts he **may** need and not just those he knows he **will** need. If he's not from the local area, does he have the right contacts to obtain these unforeseen spare parts at short notice? What does he do about checking your cylinder head for surface flatness and coolant/gas integrity? You can't just take the head off, slap on another gasket and do all the bolts up tight! Finally, if he has problems and manages to overcome them, what does he do when it gets dark and he hasn't finished?
- Don't get me wrong, there are, undoubtedly, some highly qualified, highly skilled and extremely competent mobile mechanics around. Some of them were originally employed by MG-Rover and their dealers before they went into administration and know this engine inside out. It is a lottery though and you can't pop in to see a mobile mechanic and watch him at work like you can pop in to your local garage.
- £500? Well, yes it is possible to do the job for this amount but ask yourself what has been cut from the bill to keep the price down. A low labour charge doesn't necessarily mean an unskilled worker but there will also have to be other savings made to get the job done this cheaply. If you read the attached pages and see what we do when we replace a K series head gasket, ask yourself which parts we fit that you may wish to do without.

- **I'm thinking of having my head gasket replaced “just in case” is this a good idea?**

- Not really, in our opinion. Obviously we'd be happy to carry out this work for you but why fix it if it ain't broken? It's just possible that you will never have to have the gasket replaced so our advice would always be wait until you need to do so.
- Just keep checking the coolant level and get any regular coolant loss investigated sooner rather than later.
- Have the car serviced regularly and to the manufacturer's service schedule.

- **What do Beech Hill Garage offer in the way of head gasket repair?**
 - First and foremost, we will always start by trying to find out what caused the gasket to blow. Often we will do this as part of an initial assessment when the car arrives with a suspected head gasket failure. This way we can give you a realistic estimate of the repair to **your** car and not a general idea of typical cost. At the same time we will advise you of any other work, such as cambelt replacement, that would be advantageous for you to have done. (Cambelt(s) replaced whilst replacing the head gasket will only cost you the parts – no extra labour).

- **What sort of guarantee will Beech Hill offer on this work?**
 - Our standard guarantee for this job, and any associated remedial work to the cooling system, is 12 months or 12,000 miles.