Lagondaforum: Exhaust Manifold Gasket

Exhaust Manifold Gasket

Written by H 54 John at May 31, 2018 10:09 pm

This engine never fails to surprise. Some time ago, for no very good reason, I gave the manifold new Club gaskets plus new Club brass nuts. I did the usual things that have always worked: cleaned surfaces, checked for warping, pulled up the gasket with plain washers under the nuts. And tightened again after the first thermal cycle.

On the recent Fougeres, I sprang a gasket leak unlike any other I've known - so noisy I at first thought the little ends had gone. No gas could be felt around the manifold. Tightening the nuts cured matters for a few tens of km but then the cycle would repeat. Eventually, I contrived to strip a couple of the brass nuts but replacing these with steel ones got me home reasonably quietly.

Opening up, the gasket is intact - no splits or cracks. Is there any particular technique for the 2 Litre that I should know about? Spring washers over the plain ones have been suggested but the efficacy of spring washers seems to be in doubt these days. I would really welcome any guidance on the sequence for tightening the nuts and the permissible torque. I've never used "goo' on exhaust manifolds but one of the Loctite products has been suggested though its upper temperature limit is only 350 celsius which I would have guessed would be inadequate.

I really never thought an exhaust manifold joint would present problems. Only on a 2 Litre...

John

Re: Exhaust Manifold Gasket

Written by h14 at Jun 01, 2018 9:44 am

Hi John,

We got home safely also from Fougeres, although soaked to the skin in seconds due to the deluge encountered. Given the weather forecast, we got off more lightly than hoped!

Surprised to hear your gasket is intact. If it was blowing one would at least expect a burn mark. You seem to have taken care that everything is true, so perhaps the gasket is faulty internally, ie the exhaust is passing through the gasket, between its outer mating surfaces? The only other possibility I can think of is, I hate to say it, a crack in the manifold.

Have you tried my Redex suggestion? You may need to blank off, partially at least, the tail pipe, but white smoke emerging will hopefully identify the culprit.

Laurence

Re: Exhaust Manifold Gasket

Written by Colin M34 at Jun 01, 2018 7:29 pm

Hi Guys,

Can I make another suggestion? The exhaust goes through the head gasket and if this blows it would make a horrible noise without affection the compression or water flows. I almost suspect the one on my 2 Litre has the same problem which is why I mention it.

Agree with comments about burn marks as tell-tales.

Colin

Re: Exhaust Manifold Gasket

Written by Hugo at Jun 02, 2018 12:04 am

I just had my manifold off to replace the water jacket cover plate. When I went to re-fit it, the lugs on the bottom of the manifold fouled the new aluminium plate, which stopped the manifold going fully home. This was easy to spot with the engine at eye-level, so I just ground a bit off the bottom of the manifold.

Unless you have replaced the side plate it is difficult to see how this could be your problem, but I thought I'd mention it.

Another long shot - I don't suppose it's possible that the new gasket is thinner & the nuts are bottoming out before pulling the manifold home?

Re: Exhaust Manifold Gasket

Written by H 54 John at Jun 08, 2018 6:13 pm

I apologise for the late reply Laurence - we took a short holiday to recover from the short holiday. I'm sorry the evil orages caught up with you - we somehow ran between them though had the hood not been up (which I hate) I'm sure we would have been also soaked under Dr Sodde's Universal Law.

I think I described the gasket condition poorly. There are no cracks or tears but plenty of soot marks on both sides marking the blow. Nothing I could call a burn though. All the evidence is that the brass nuts just kept on loosening off, something I've never encountered before.

I didn't try your Redex ploy as having got home I just charged in and removed the manifold. Great idea though.

My thanks to Colin and Hugo for excellent ideas but I think now that the problem is simply brass nuts refusing to stay tight. As yet, I don't have a cure for this. Something called a Nord-Lock washer has been suggested to me as being better than a spring washer but I've yet to investigate.

Thanks to all for the help,

John

Re: Exhaust Manifold Gasket

Written by h14 at Jun 09, 2018 10:42 am

Hi John,

We had also planned a short "holiday" to follow, but the hotel charging an unexpected extra €66 for breakfasts (since refunded) and the overlooked cost of petrol to get home left us with no money to pay for it, whilst we still wait for money from our investments to be released, Don't invest with LMEP / AG2R!

Still find your nut loosening odd. Usual problem is totally the opposite, brass nuts appear to age-shrink onto their studs in this application. Not come across a Nord-Lock washer. Locking (or at least, spring) washers are unusual in this application, either because of corrosion or more likely, heat de-tempering the washer.

I think a far superior solution would be a suitable grade of Loctite. In fact, as that might prevent corrosion, could be a major benefit in that eventually undoing them in the future could actually be viable without stripping threads etc.

All this said, I think we are talking of addressing the symptom, not making the cure here. Firstly, I'd check that all your exhaust mountings are secure and effective. If that doesn't reveal anything untoward, perhaps there is some resonance/vibration within the engine causing this. I suspect the 2 Litre engine will be solidly mounted, so engine mounting unlikely to be a culprit, but worth checking mounting bolts. An unlikely contender could be cracked chassis or loose rivets, but I suspected you'd have encountered other problems in that case.

One final thought, could there be a problem with the thread form on the Club-supplied nuts you are using? Unlikely, as surely others would have encountered the same problem. Possibly the stud threads are worn; if rusted as they often are, de-rusting may have removed enough metal to cause problems, especially if what is left of the threads has effectively been polished smooth.

Laurence

Re: Exhaust Manifold Gasket

Written by H 54 John at Jun 09, 2018 8:54 pm

Laurence, I think I have it. Or at least a major contributing factor. The manifold is held by 8 studs and 5/16 BSF nuts. It turns out that two studs have 1/4 BSW threads so it's quite obvious why the soft brass BSF nuts being forced onto these rogue studs failed.

And the engine was "professionally" rebuilt at great expense a few years ago. Ouch.

Thanks for all the help, very much appreciated.

John

Re: Exhaust Manifold Gasket

Written by Colin M34 at Jun 10, 2018 8:32 am

Hi Folks,

My thoughts on 2 Litre studs - both exhaust and engine water plates.

What a vile job! The studs rust in or simply jam. They are all BSF and may end up needing to be drilled out if they snap. Stud extractors can help but then they can snap as well, the you are in big trouble trying to carefully drill out studs under the camshaft tunnels.

Heat can help.

In the end it might be easier to pull the engine out and do them all upside down. If not, I think you may find it useful to remove the steering box as well as the dynamo.

I seem to recall that we had a discussion about undesirability of stainless steel bolts/studs so perhaps the new studs could be made from bright zinc plated high tensile BSF set screws which seem to be readily available, possibly dipped in Copper-slip grease so they never seize again!

Brass nuts are then good.

I wish you luck and hope there are not to many broken studs and you get to enjoy the car again quickly.

Colin

Re: Exhaust Manifold Gasket

Written by Colin M34 at Jun 10, 2018 8:34 am

(Duplicate deleted)

Re: Exhaust Manifold Gasket

Written by h14 at Jun 10, 2018 9:03 am

Hi John,

Hope it wasn't the "professional vintage engineers" who "rebuilt" my LG6 for the previous owner so appallingly. What a daft thing to do, hope you can replace the rogue studs without too much difficulty.

Laurence
