

# Lagondaforum: Oil pumps

## Oil pumps

*Written by Julian at Sep 19, 2012 7:53 am*

Just having a new batch of uprated oil pumps made.

These will have "Rotary Star gear" internals and will stop the following poor characteristics of the standard pump.

- A. The pulsing effect caused by the standard "shuttle" type pump.
- B. The draining down while parked for longer periods causing lack of oil pressure on startup.
- C. Heavy wear to the drive dog that is caused by the pulsed loads on the standard pump.

And will of course give more flow and much more constant oil pressure. All while looking just like the standard pump!

These will be complete NEW units so no need to lose your old pump.

Drop me a line if interested.

Regards,

Julian

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## Re: Oil pumps

*Written by Colin M34 at Sep 19, 2012 9:21 am*

Hi Folks,

This is very interesting.

I agree with all of Julian's comments about the shortcomings of the 2 Litre oil pump and would like to remind readers that there are different variants of the basic design, as explained to me by the late Phil, Ridout. Basically the early pumps were smaller diameter and the later "speed model" ones were of larger diameter giving a greater swept volume. It may even be that supercharged cars had a yet larger version as well.

I have seen many of the problems Julian has mentioned, and have fitted a non-return valve in the line to avoid draining down. However, I would argue that because of the engine design, lack of oil pressure on start-up is not too serious a problem. This is because the speed model crank pin journals are hollow so would naturally accumulate oil in them. Also, it is good practice to wait for the oil pressure come up on starting. Nevertheless I very much like the idea of the improved pump to overcome this problem.

I have an additional issues that I would like reader's opinions on. When my car is warmed up, the oil pressure is pretty constant at just over 30 psi but if I am on an open road going quite fast, it can drop below 20 psi. I am not sure why, I think it could be that the oil gets hot and the viscosity drops. I have fitted a full-flow oil filter and generally uses a modern SF grade 10W-40 oil. On the other hand it might be that the relief valve comes open at high revs. Anyone got any ideas?

So Julian's improvements will give more flow and much more constant oil pressure, and I do like the idea of combining one of these pumps with his new crank whilst still looking just like the standard unit. Maybe some time I will try this out some time.

I must say I do like the 2 Litre speed model, and when combined with sensible mods, it becomes an even nicer car to use in modern conditions. so well done Julian.

Colin M34

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## Re: Oil pumps

*Written by Julian at Sep 21, 2012 11:39 am*

Thanks Colin, kind words.

We did some testing a little while ago with regards to the fluctuating oil pressure at higher engine speeds and while not finding a complete cure we did

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come to some conclusions.

1. the std pump design was causing excess cavitation at higher speeds, this we proved on our test rig.
2. The pipework and std routing of the oil before and after the pump was also causing some cavitation, this disappeared on the test bed without the pipework with the modern internals but came back with the pipework.
3. With the new pump it was better up to a steady 40 psi constant. but if let to go too high (60+) the cavitation came back and caused the pressure to drop back to 40 or 45 psi
4. The standard pressure relief valve is prone to open due to engine harmonics if set at about 40psi. We had this on several standard engines but not on the 2.4 or on the test rig. and tried many springs but all did it if set in this range!
5. Probably many other reasons we will find out in time ;o)

Best regards,  
Julian

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### Re: Oil pumps

*Written by Colin M34 at Sep 21, 2012 5:03 pm*

Hi Folks,

Great post from Julian.

I agree with his cavitation diagnosis and am not surprised that the pipe work routing makes a difference. I am also very interested in the conclusion that engine harmonics may cause the standard pressure relief valve to open. I am a great believer in not having too high an oil pressure, and 2 Litres are such strong cars that I'm sure these fluctuations are not particularly serious.

Colin