

## Lagondaforum: Water Pump Modification

### Re: Water Pump Modification

*Written by ray sherratt at Jun 05, 2013 7:56 pm*

You can't move the bolting face on the pump drive pulley, the

body of the pump is about 3mm from the inside of that face.

It isn't advisable to remove the bypass system, this is there to

prevent hoses being blown off. The pump will produce up to 45psi when the engine is revved. Are you sure the temp

gauge is right, test it by disconnecting it and immersing in a

kettle and boil it. It should register 100c, (granny sucking eggs).

Have the rad reversed flushed. Is there anyway to increase

air flow through the engine compartment. There are many things to consider, are the bleed holes for the liners weeping,

these engines tend to silt up around the liners. Years of rad

weld to seal up leaks tends to build up at the bottom of the

liners. Fit a 72c stat, check ignition and fueling. Is there a alloy

cowl bolted to the rad encircling the fan to duct all the air through the rad

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### Re: Water Pump Modification

*Written by randall977 at Jun 07, 2013 2:58 pm*

Thanks for advice Ray, very helpful.

David, did you once mention something about the seal which runs around the gutter in the engine bay? I was thinking that the original seal could be swapped for a low profile finisher instead, this would create quite a large gap for the warm air to escape out of...?

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### Re: Water Pump Modification

*Written by ray sherratt at Jun 07, 2013 8:20 pm*

Hi Christian.

I can't see the reason for sealing the bonnet edges, this will increase the heat soak in the motor causing vapour lock in the carbs. Remember these machines were made at a time when the roads were less congested, speeds were higher keeping air flow up. Running these engines on unleaded fuel makes them run hotter. The point about the temp gauge is something I found some years ago on a Aston Martin DB3S, the kettle boiled and the gauge read 75c, the owner swore blind he never raced it above 85c, hence flash over heating of the pistons.

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### Re: Water Pump Modification

*Written by randall977 at Dec 12, 2013 2:51 pm*

Thanks Ray, I think the slats under the bonnet are meant to keep the air flowing even with the seal in place but unleaded fuel does add an extra element to be considered.

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### Re: Water Pump Modification

*Written by David at Dec 12, 2013 7:49 pm*

Andy Chapman would stress that the only proper way in for air is through the radiator aperture, so the slats are for air exit, aided by the low pressure areas in the front wheel arches. Air in through the unsealed bonnet allows turbulence or static under-bonnet air which as Ray says causes heat soak; from practical experience heat soak is reduced if the bonnet is "up" on its first catch where flow is aided by the low pressure region at the base of the front windscreen, which suggests that the bonnet seal might be usefully omitted in this area. That said there is a slight lip on the underside of the bonnet here which might disable the flow when the bonnet is fully closed. It's for these reasons that I'm sceptical about the effectiveness of the additional bonnet air inlet scoops fitted to the Australian car 110

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### Re: Water Pump Modification

*Written by ray sherratt at Dec 12, 2013 9:18 pm*

On the Lagonda circa 1960s I don't know how much room is available front or rear of rad, but any modern electric fan needs ducting. The problem with fans placed in front spill a large amount of cooling air out to the side, usually returning through the fan. To the rear of the rad the fan sucks the air from the sides instead of through the rad. I would think the arrangement on the Lagonda is as the DB4/5/6. If you are retaining the engine driven fan, I would look at a ducted front fan, remember they pull a large amount of amps and therefore require large cable. Power it by rad switch placed in the top hose area, and a relay may be 2 in parallel. Startup amps can be between 25/30 depending on motor and fan.

Ray

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### Re: Water Pump Modification

*Written by randall977 at Dec 13, 2013 11:28 am*

The setup I've gone with is a Revotec thermostat at the bottom outlet of the rad with a 16" 80A electric fan which pushes through around 2100CFM, this sits in front of the rad. The Revotec thermostat is an adjustable inline type rather than the capillary type (which I think looks crude).

The Rapide radiator is ducted on both sides, though on the engine side the cowl is designed to fit the mechanical fan. I have removed the mechanical fan as I don't think it will add benefit when needed and may further restrict air flow. In slow traffic on a hot day the mechanical fan is spinning slowly when you really need it to be fast. I've only tried the new fan a few times but it seems to work well letting the engine run up to around 93 and then bringing it back down to around 88...ish.

Also a mechanical fan reduces the HP by around 5%.

I'll let you know how I get on.

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### Re: Water Pump Modification

*Written by David at Dec 13, 2013 1:27 pm*

I hope you've got enough electrical power to cope with that fan load as well as other stuff, e.g. at night in rain!

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### Re: Water Pump Modification

*Written by randall977 at Dec 13, 2013 2:27 pm*

I've put in a very large battery so as long as the dynamo output keeps up then I should be fine...

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### Re: Water Pump Modification

*Written by ray sherratt at Dec 13, 2013 4:26 pm*

I think you should be looking at fitting a modern large output alternator to keep up with demand. Battery size is relevant to starting demand, your dynamo only has an output

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29/31 amps if your lucky remember it is Lucas. This is the reason they fitted a ballast resistor ignition systems, with the battery in the boot there is a large drop in volts at the coil on start up. Even the converted dynomo/alternator units have a hard time with demand.

Ray.

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