Lagondaforum: Identifying cause of play in Axle Half shaft

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Written by Mark at Oct 19, 2016 8:14 pm

I have play or lift (up and down only) on my 1932 2 Litre offside half shaft (light axle)

The half shaft and bearing carrier was removed complete and a new good quality hub bearing fitted. The play was still present! The bearing is tight in the housing so both the normal causes are ruled out.
The next question is whether the splined hub is sufficiently tight on the half shaft taper and Woodruff key. I am sure it is but will check this in due course.

Assuming the hub to half shaft joint is not the cause, it points to the differential. Possibly wear in the splines in the sun wheel or the diff bearing both of which locate the haft shaft in the differential assembly. Wear of this type in the sun wheel splines would I guess be unlikely as the stresses in the splines are rotational? So it may be the diff bearing?

Before I get into stripping the differential out of the axle, does anyone have experience of such a problem or an opinion of how to accurately diagnose the cause prior to complete strip down?

Advice gratefully received
Regards
Mark

Re: Identifying cause of play in Axle Half shaft

Written by bill at Oct 20, 2016 8:39 am

Is there enough space to get an endoscope into the axle casing to observe what is happening when you move the halfshaft up or down ? These endoscopes are not too expensive and are very useful. Or can you borrow one ?

Re: Identifying cause of play in Axle Half shaft

Written by Mark at Oct 20, 2016 8:55 pm

Not sure whether there is space for an endoscope but will investigate, I can borrow one if needed. The only option would be to remove the diff cover plate on the rear and I may be able to get access to observe whilst an assistant moves the half shaft.
My guess is the bearing in the diff has badly worn. I was hoping someone may have had the same experience and could comment on the symptoms and diagnosis.
I will update the post once I know the outcome but any observations gratefully received
Mark

Re: Identifying cause of play in Axle Half shaft

Written by Mark at Nov 10, 2016 1:11 pm

Update: Unable to remove the cover on the rear of the differential housing unless I drop the petrol tank or drop the axle by removing the rear shackle pins which did not appeal.
Therefore removed the splined hub from the taper on the half shaft to see if the play was still present in the half shaft...it was
As I fitted a new hub bearing which was tight in its housing only a few years back this does indeed point to the differential bearing being at fault. So will now remove the differential.
More to follow...

Re: Identifying cause of play in Axle Half shaft

Written by Colin M34 at Nov 10, 2016 2:30 pm

I am due to have the diff cage on my M45 changed and it seems as though knocking the front pins out of the springs and swinging it down is the best way. It looks like a horrible job and will get it done for me by a local axle specialist.

I fear that pulling the diff cage is probably more effective than taking the other cover off but either way, it's not something that I would enjoy doing myself.

Colin

Re: Identifying cause of play in Axle Half shaft

Written by Mark at Nov 10, 2016 6:58 pm

I seem to be plagued by differential problems this year as the LG45 diff had pinion bearing failure in April. Being a de ville LWB it came out fine but dangerously heavy so trolley jack needed plus help with holding a rope around it! The M45 would almost certainly need the axle dropping down to get at the diff due the close proximity of the battery boxes.

My 2 Litre isn't so much a problem, it is the light axle so not as heavy as a 4.5L and should hopefully come out fairly easily.

Mark

Re: Identifying cause of play in Axle Half shaft

Written by Mark at Dec 19, 2016 5:27 pm

Here is an update...differential came out fairy easily once half shafts extracted. It was a tight squeeze without the springs dropped down due to the battery boxes.

Then the problems started to become evident. The crown wheel and pinion mesh had not been set up properly resulting in a wear step in the teeth. The pinion teeth were chipped and there was significant wear in the planet gears...which is the main reason for the play at the wheel which started this thread in the first place!

Anyone have a serviceable 10x42 light axle differential for sale?
