

Lagondaforum: Brake overhaul - brake rods

Brake overhaul - brake rods

Written by DavidLG45 at May 03, 2015 10:43 am

Some of my brake rods have kinks in them where they shouldn't have kinks.

I would like to replace them as I don't want to try and straighten them and possibly weaken them. Possibly replace them all.

They are 5/16 inch rods. They would need to be tensile steel I imagine. Engineering advice needed. What grade of steel should I use?

David

Re: Brake overhaul - brake rods

Written by alecrb at May 03, 2015 8:09 pm

Hi David;

I'm working on that same area on my 16/80. I'll probably use 1144 stressproof rod - here is a North American link.

<http://www.mcmaster.com/#grade-1144-steel-rods/=x0ubtt>

I've been checking various bits with a hardness tester at work - I'll take a brake rod in tomorrow and see what hardness it is - this gives me the steel's tensile strength and it should confirm the above suggestion.

Alec

Re: Brake overhaul - brake rods

Written by DavidLG45 at May 04, 2015 11:44 am

Hi Alec,

Thanks that'd be very helpful. I'm in the UK so would need to find the UK equivalent grade. Imperial sizes are not used a lot these days but can try and find 5/16. Could possibly use 8mm - at least it's slightly bigger and not smaller.

David

Re: Brake overhaul - brake rods

Written by Bill LG45 at May 04, 2015 9:11 pm

If you want to source suitable brake rod material in the UK quickly it might be an idea to cannibalise Model A Ford brake rods, which I managed to get off the shelf from Belcher Engineering in the past for my Model A Ford.

NB: Any threads on these would be "American" UNF rather than the BSF threads on the Lagonda but they are 5/16 inch dia and the main Model A brake rods are about 4 ft long.

There are a number of other UK suppliers for Model A parts such as Oneillvintageford.co.uk who list two available (made in the USA) on their web site at £20 each

If you decide to use metric rod remember you will need to cut 5/16 BSF thread on the end to match the Lagonda fittings

Hope that helps

Bill

Re: Brake overhaul - brake rods

Written by alecrb at May 05, 2015 12:29 am

Hi David;

I did check out a brake rod today - it was 90,000 psi (600N/mm²) tensile strength on the outer surface and somewhat higher internally, about 100,000psi (660N/mm²). This is stronger than a low carbon cold drawn rod. Something with 0.5% carbon, cold drawn, maybe? I don't know the European nomenclature but a 44SMn28 looked interesting and similar to 1144.

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Alec

Re: Brake overhaul - brake rods

Written by alecbr at May 05, 2015 6:00 am

I measured up my front brake levers as they were usually set up and assuming a gargantuan 300lb pedal force acting only on the front brakes, worked out the tensile stresses in the brake rods. The short rod connecting the brake pedal lever to the cross-shaft carries the highest load, some 56kpsi in this scenario, while the others carry less than half this. So you do need a good grade of steel for that one short rod, but the other rods could be a standard cold rolled low carbon steel. Sketch attached, I hope.

Alec

Attachments:

[brake force.jpg](#) (filesize: 23.54 KB)

Re: Brake overhaul - brake rods

Written by DavidLG45 at May 05, 2015 10:23 am

Hi Alec and Bill,

Many thanks for your help. I will see what I can find. I am not in a particular hurry but cutting down off the shelf rods is an option that hadn't occurred to me. The longest I need is 1s 44 7/8th inch. But I would need that amount without a thread.

David

Re: Brake overhaul - brake rods

Written by DavidLG45 at May 05, 2015 5:24 pm

Apparently EN8 steel would be a suitable equivalent in the UK.

So that's what I will get.

Thanks once again for the assistance.

David
