

Changing your lower shock bushes ...



... and replacing the front suspension

■ Words & photos: Ben Sale



I traced a squeaking noise coming from the front of my car to the two

front shock bushes. My car has Bilstein shocks fitted and, apparently this a known item to fail. In order to do this I had to remove the front shocks so I thought I'd do a quick photo guide to that too.

Firstly, **don't** follow the guide in the *Haynes* workshop manual ... if you do you'll throw out your wheel alignment as I did when I loosened the LCA bolts on the first side ... and I stupidly didn't think to mark the camber position either ... damn!

You don't actually need to touch the lower control arm at all. However, it had been about 18 months since I fitted my suspension so unfortunately I'd forgotten.

1. The first step is to jack the car up safely (I always find the front a pain due to my car being lowered and fitted with a front lip) and put it on stands.

2. You'll need to remove the undertray which is held on with a number of 10mm nuts and bolts and then disconnect the swaybar from the endlink. I also unbolted it from the chassis so I could move it out of the way of the control arms.

Next:

3. Undo the two nuts in the engine bay at the top of the shock.

4. Remove the bolt at the base of the shock.

... continued



1. Jack up the car



2. Disconnect the swaybar from the endlink



3 ~ 4. The unbolting process ...

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5. Next remove the long bolt which runs between the two bushes on the upper control arm. **Before** I removed this I placed the scissor jack underneath the lower control arm. This is because, when you remove this bolt, the whole assembly will drop down quite suddenly when you get the bolt out. The long bolt is also a lot easier to remove when the hub and control arm are supported; if it is not supported you'll probably find you need to use a punch to remove it.

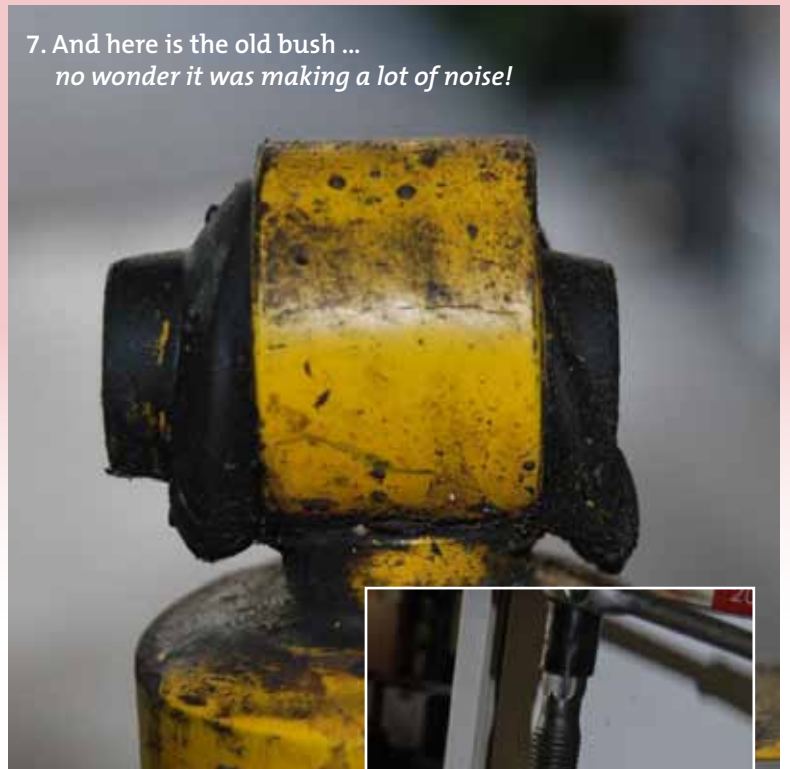
6. Lower the control arm via the scissor jack (you could use a trolley jack but I only have one and I decided to leave it for additional support under the car. When you've lowered it enough you will be able to pull the shock out.

5. Remove the long bolt between the bushes



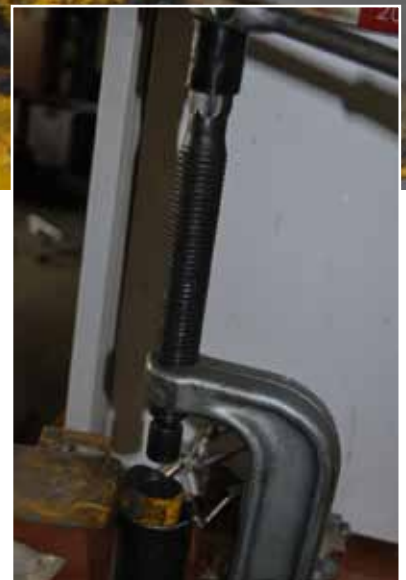
6. Lower the control arm

7. And here is the old bush ... no wonder it was making a lot of noise!



8. The process of removing the actual bush was a lesson in using the right tool for the job ... I stuffed around for ages trying to remove the bush using various unsuccessful methods. I just didn't have the right tool.

Then I remembered that the Mazda MX-5 Club actually owns a bushing tool; President Murray is its custodian and happens to live five minutes down the road from me. So a quick drive in my Alfa to his place. Once back it took me literally two minutes to pop the bush out. It's a really useful tool the Club owns and it's available for all members to borrow.



8. Remove the old bush



9. New vs Old ...

9. And as this photo shows, to put it politely *the bush was stuffed*. No surprise that it was noisy!

10. **Installing the new bush** in the shock is quite simple with a vice. I put a bit of grease on, then first popped the bush part in. I then got the metal sleeve insert and put it in the same way with the vice. It took about a minute of fiddling to get it all to sit correctly.

11. **And then back together it all goes.** As always I applied a good amount of copper grease to all the bolts which I had removed before I put them back in. I also took the time to clean the suspension up a bit as the underbody

and suspension were covered in mud from a motorkhana event.

The other side was the same as this. With the right tools, preparation and without any problems I would say you could do this job in under two hours from start to finish.

This guide will work for anyone installing new front suspension too as the process for removing and installing springs and shocks is exactly the same as outlined in this guide. ■



Rear shocks?

I thought I would also write up a quick method to change the **rear shocks** as Alex Hailstone and I recently did both front and rear on her 1995 NA8. The process is quite similar to the front.

- » First you need to get the rear of the car safely in the air and supported by stands.
- » Next you need to get access to the nuts at the top of the shock. To do this you'll have to remove the spare wheel and the metal cover in front of the fuel lines on the left side of the boot. The nuts on this side are particularly hard to get access to as it seems that no matter what tool you use the fuel lines get in the way somehow.
- » Once you've got the top nuts off then discontent the sway bar from the lower control arm. Next remove the 17mm lower shock bolt at the base of the shock. If it's stubborn and doesn't want to budge then spray it with plenty of penetrating lubricant and wait for it to loosen. Otherwise you may round the head of the bolt and have to remove the whole control arm to get it to someone who can remove the bolt (don't ask me how I know ...) Once this bolt is off, remove the upper control arm bolts.
- » At the rear there are two bolts as opposed to the front that has one long one. The rear suspension doesn't drop quite like the front when you remove these bolts.
- » To get the suspension out we pushed down on the lower control arm until it moved down far enough that we could pull the spring and shock unit out.
- » When reinstalling a shorter coilover unit was being fitted so we didn't have to worry, but go get a standard height unit back in would require pushing the lower control arm down in the same way to get it back into the car. As they say, reinstallation is the reverse of removal ... and remember to grease the bolts so that next time it's much easier to remove everything.



The Club's bushing tool is available for any Club member to borrow ...