



NUTS AND BOLTS

Dave Roche, XKEC member and also one of the Parts Advice Team, and regular columnist with GROWLER magazine. This edition Dave talks about Jaguar V8 engine timing chain and tensioner issues. Website: www.xk8-parts.com



Close up of latest fourth generation metal timing chain tensioner

Timing chains, tensioners and peace of mind

... FOR MODELS BETWEEN 1996 AND 2002

If you own a Jaguar XK8 or XKR built from 2003 onwards, you can on the whole rest assured that your 4.2 V8 engine is virtually bullet proof with all the problems associated with the earlier engines fitted from 1996 to 2002 having been resolved. However, for earlier XK8/XKR owners like me, we need to be aware of some potentially serious issues and if required resolve them for complete peace of mind.

As reported many times before, the major engine problem areas are Nikasil bores and

weight as much as possible through the use of plastic component parts. This included the timing chain tensioners, in particular the secondary/upper chain tensioners but there have also been problems with the primary/lower chain tensioners, slippers and guides as well.

In the earlier XK8/XKR models, given the stress, heat and wear that these parts

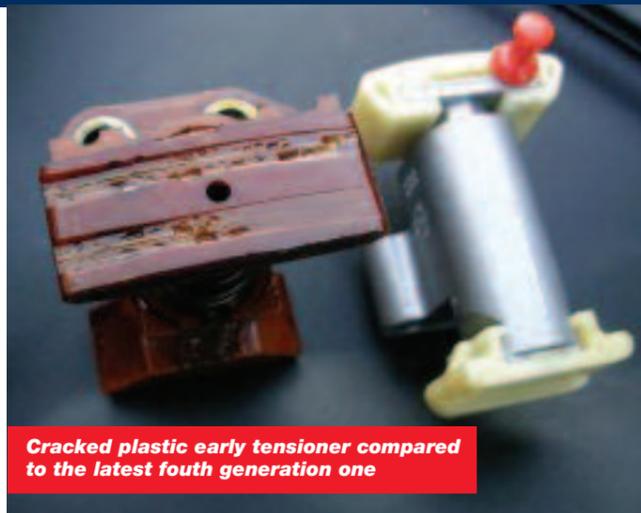
have to endure sooner or later they can crack and begin to break up allowing chain contact with the metal inner support. This can then potentially lead to the chain slipping by a cog. A grinding noise on start up of a cold engine could be indicative that this has happened in which case the damage will have been done.

Worst case scenario (chain slip or snap !) could be severe engine damage and costly engine repairs or replacement. To add further complications, the primary/lower timing chain tensioners and dampers are far more inaccessible.

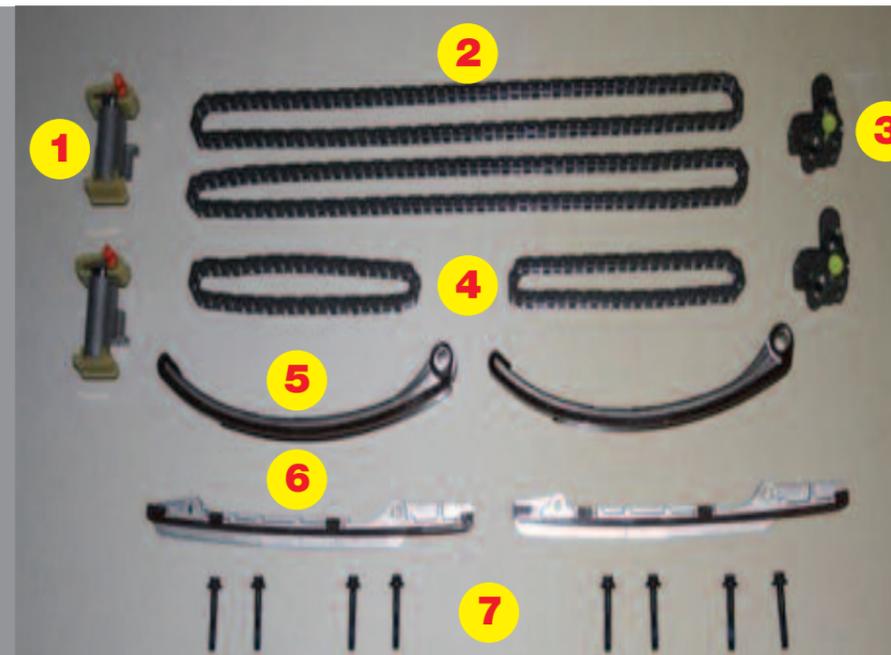
These tend to be more reliable as the

chain does not ride directly over the lower tensioner. However, if there is a pronounced rattling noise from the engine then these tensioners will need to be replaced as well as the chains.

Jaguar recognised the above problem and changed the design over four generations finally using a more conventional metal type of tensioner as fitted to the 4.2 XK8/XKR engine. High mileage/early cars may well of had the tensioners and possibly the associated chains and guides replaced but if not then it's advised to have them checked as soon as and if required replaced with the later parts.



Cracked plastic early tensioner compared to the latest fourth generation one



1 Top tensioners 2 Primary (bottom) chains 3 Bottom tensioners 4 Secondary (top) chains 5 Primary chain guides 6 Primary chain guides 7 Top and bottom chain tensioners bolts

Latest alloy backed primary timing chain slippers with small bush insert to allow use of the original bolts



APPROXIMATE PRICE FOR FULL KIT AND FITTING

An approximate price for the full kit overhaul including labour would be:

■ Latest fourth Generation Kit - £335

■ Gaskets and Seal Kits - £125

■ Labour - £800

■ Total = £1260 + UK VAT.

It is possible for a reasonably competent amateur to do the job but specialist tools will be required as follows:

■ Camshaft position setting tool

■ Sprocket retaining tool

■ Suitable short allen key socket

■ Quality socket set

bodied tensioners are also fitted.

This may all seem complex and difficult to make a decision on what is actually best to do for your particular car and many people will have different views on this. If you have a pre 2000 car and you have evidence of a full timing chain and tensioner overhaul then depending on your mileage you can rest assured.

If not then I would suggest that this job be done as soon as possible and in view of the problems reported here then a full timing and tensioner overhaul be done. If you have a 2000 to 2002 model year car I would recommend that at least the top tensioners and chains be checked and replaced with the later fourth generation parts.

There is a kit consisting of the parts to do just this. However, depending on the cars mileage you might just want to go the whole hog and replace all the timing chain and tensioner parts as part of a good servicing schedule for your car.

If you have a 2003 car with the 4.2 engine then your engine will have the latest parts and here is just a case of monitoring your car's mileage and perhaps at 100K miles you might want to consider a full service of the timing chains, guides and tensioners ●

Another problem with the early engines relates to the use of bonded plastic slippers and guides. Each lower (primary) timing chain is tensioned by it's own tensioner and this reacts against a slipper over which the chain runs over the guide on the other side.

These are also prone to cracking but experience shows that this is far less of a problem than the failure of the upper tensioners. However it is advisable that if the lower tensioners are to be replaced then the guides and slippers should also be replaced.

In the past this was a case of sourcing the correct Jaguar original plastic based

replacement parts here which should last well if replaced but this is not the most ideal solution. The later 3.2, 4.0 and 4.2 V8 engines use alloy backed guides and slippers.

These are much more robust and of higher quality than the earlier components. The main problem is that these parts cannot be retro fitted to the earlier engines because they use a different type of timing chain and tensioner arrangement.

However, the guides and slippers have been redesigned by an original equipment manufacturer so that they will now fit the earlier engines providing that the latest metal